

# What is the best predictor of emotional distress; mindfulness, self-compassion or other-compassion?

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## Abstract

*Aims and objectives.* The aim of the current research was to explore the relationship of mindfulness, self- and other-compassion with emotional dysregulation and symptoms in a clinical population suffering from mild-moderate anxiety and depression.

*Method.* In order to investigate the relationships amongst the variables of interest, a cross-sectional design was employed. Quantitative data were collected via five self-report questionnaires measuring mindfulness, self-compassion, other-compassion, emotion dysregulation and emotional distress (anxiety, depression and stress), in addition to demographic information. A total of 94 adults enrolled in Improving Access to Psychological Therapy groups completed the questionnaires.

*Results.* Multiple regression analysis indicated that all three predictor variables (mindfulness, self-compassion and other-compassion) significantly predicted variance within the measure of emotional distress, with mindfulness holding the most predictive power. Only mindfulness and self-compassion significantly predicted variance within the measure of emotion dysregulation, with self-compassion holding the most predictive power. Mediation analysis showed that emotion dysregulation partially mediates the relationship between mindfulness and emotional distress. Additionally, mediation analysis showed that emotion dysregulation perfectly mediates the relationship between self-compassion and

emotional distress. Emotion dysregulation did not significantly mediate the relationship between other-compassion and emotional distress.

*Conclusions.* This study was the first to empirically explore the relationship of other-compassion with emotion dysregulation and emotional distress. The current findings suggest that other-compassion was not as important as mindfulness and self-compassion in regards to emotion dysregulation. The role of mindfulness and self-compassion within emotion dysregulation and emotional distress supports previous research findings. It is argued that the current study's findings are supportive of theoretical accounts that explain mindfulness and self-compassion as mind-training tools designed to improve emotion regulation in order to reduce emotional distress.

## Chapter One

### Introduction

#### *1.1 Chapter Overview*

The aim of this thesis is to explore the relationship of mindfulness, self- and other-compassion with emotional dysregulation and symptoms in a clinical population suffering from mild-moderate anxiety and depression. Although treatments using techniques of self-compassion and mindfulness have begun to show preliminary efficacy and effectiveness in these disorders (e.g., Gilbert and Procter, 2006; Mayhew & Gilbert, 2008; Neff & Germer, 2012; Teasdale et al., 2000; Teasdale & Ma, 2002), at present it is not clear what their mechanism is. Within transdiagnostic models of treatment (e.g., Barlow et al., 2007; Nolen-Hoeksema & Watkins, 2011; Norton, 2008) the emphasis is shifting from symptoms to common processes of faulty emotional regulation which produce these symptoms. The variables used in this thesis have been chosen as they are transdiagnostic and represent a unique look at what may contribute to emotional distress.

The thesis will begin by reviewing the literature which suggests that it might be useful to think of depression and anxiety in transdiagnostic terms where emotional distress or symptoms may be underlined by faulty processes of emotional regulation. Recently devised treatments and third-wave cognitive behavioural therapies have brought in concepts and tools which have been derived from the Buddhist tradition into the treatment of anxiety and depression (e.g., Carlson & Garland, 2005; Grossman, Niemann, Schmidt & Wallach, 2004; Harris, 2006; Hayes, Luoma, Bond, Masuda & Lillis, 2010; Linehan, Armstrong, Suarez, Allmon, Heard, 1991; Linehan et al., 1999) including mindfulness and compassion. The theoretical literature behind

these concepts will be described with preliminary ideas about how they might enhance emotional regulation and thus reduce emotional distress. The relationships between mindfulness, compassion and emotional regulation and emotional distress have only just begun to be teased out within the research literature. Additionally, almost no research has been conducted looking at the variable other-compassion as self-compassion has alone enjoyed an in depth examination. Exploring the relationship of other-compassion with emotional distress represents a gap in the existing literature which this thesis aims to begin addressing. A systematic review of current literature looking at the relationship between these variables will be presented and this leads to the specific research questions of this thesis. This thesis will test a novel mediation model exploring whether emotion dysregulation mediates the relationship between mindfulness and self/other-compassion with emotional distress. The research questions will then be clearly outlined and the primary and secondary hypotheses will be described.

## *1.2 Emotional Distress*

Anxiety and depression can be described as disorders of emotion (Barlow, 1991; Barlow, 2002; Barlow et al., 2011) where a healthy amount of stress turns to *distress*. Clinical psychologists are involved in applying psychological theory to patients who are experiencing emotional distress. Understanding the variables which contribute to emotional distress is therefore a high priority in applied psychological research in order to develop effective psychological treatment.

*1.2.1 Prevalence rates.* Depression and anxiety are the most common emotional distress problems in the United Kingdom with almost 9% of people

meeting criteria for diagnosis. (Singleton, Bumpstead, O'Brien, Lee & Meltzer, 2000). Anxiety and depression are frequently comorbid (Kaufman & Charney, 2000) and there is evidence that comorbid depression and anxiety has a worse prognosis, with more associated disability and more persistent symptoms than either depression or anxiety disorders alone (Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007). Depression and anxiety disorders can have a lifelong course of relapse and remission and depression is the most common disorder contributing to suicide (National Institute for Clinical Excellence [NICE], 2011). Current prevalence estimates suggest that in the United Kingdom at one time point, 21 individuals out of every 1000 reach a diagnosis of major depressive disorder (NICE, 2004). Furthermore, when this is broadened to include mixed depression and anxiety, the prevalence rate increases to approximately one in every 10 individuals (NICE, 2004). These prevalence rates indicate that it may be worthwhile to look at emotional distress generically as there are high rates of disorder comorbidity.

*1.2.2 The cost of emotional distress.* Thomas and Morris (2003) have outlined the cost of depression in the United Kingdom. It was estimated at £3.5 billion in the early 1990's. Since the shift to community-based management for depression a more recent estimate states that the total cost is now estimated at over £9 billion per year. Of this figure £370 million represents direct treatment costs and the remainder represents lost employment. The Joint Strategic Needs Assessment (JSNA, 2010) estimates that by 2026 these figures are projected to be £3 billion per year for treatment costs and £12.2 billion including treatment costs and lost employment. The cost of services for anxiety disorders for the whole of England in 2007 was approximately 1.2 billion. Including lost employment costs brings the total

to £8.9 billion. By 2026 it is projected that service costs for anxiety disorders will be £2 billion per year for treatment with total costs at £14.2 billion (JSNA, 2010).

*1.2.3 Components of emotional distress in the current study.* Emotional distress or symptom expression may contain a multitude of emotions, symptoms and transdiagnostic processes. The current study focuses on emotional distress as containing three basic symptom constellations around depression, anxiety and stress. While developing a psychometric measure that could discriminate between depression and anxiety Lovibond and Lovibond's (1995) factor analytic studies confirmed three reliable scales. These studies of nonclinical and clinical samples went on to produce the Depression, Anxiety and Stress Scale (DASS-42). The Depression scale's items typically describe dysphoric mood (e.g., sadness or worthlessness). The Anxiety scale items are around physical arousal, panic attacks, and fear (e.g., trembling or faintness). The Stress scale items include feelings of tension, irritability, and a tendency to overreact to stressful events (Antony, Enns, Bieling & Swinson, 1998). Results indicate that combining the Depression, Anxiety, and Stress scales for use as a measure of general psychological or emotional distress has considerable validity (Henry & Crawford, 2005). It is this conceptualisation of emotional distress which will be used in the current study. One hypothesis is that there are some generic transdiagnostic faulty emotional regulation processes which underlie symptoms of emotional distress (Aldao, Nolen-Hoeksema & Schweizer, 2010).



### *1.3 Evidence for Transdiagnostic Processes*

In many mental health services, comorbidity of psychological disorders is the norm rather than the exception (Watkins, 2009). Comorbidity is when an individual qualifies for the diagnosis of more than one disorder, either across their life-course (lifetime comorbidity) or at present (current comorbidity) (Watkins, 2009). The Diagnostic and Statistical Manual of Mental Disorders (fourth edition, text revision; American Psychiatric Association, 2000) emphasises the differentiation of psychiatric disturbance. This manual has been adopted by mental health teams across the United Kingdom and the research, training and treatment emphasis is disorder specific. However, a competing view point can now be seen with a growing focus on psychological processes that are common across disorders and a renewed interest in treatment strategies that might be more broadly effective across diverse conditions (Clark, 2009). Emotion dysregulation is proposed as one of these psychological processes common across disorders and is thought to maintain emotional distress (Kring, 2008). Other common processes have been investigated and a growing body of evidence is beginning to emerge. For example, there is now increasing evidence that rumination is implicated not only in depression (Watkins, 2009), but also social anxiety (e.g., Abbott & Rapee, 2004; Mellings & Alden, 2000), generalized anxiety disorder (GAD; American Psychiatric Association 1994; Hoyer, Becker & Magraf, 2002), obsessive-compulsive disorder (Vanoppen, Hoekstra & Emmelkamp, 1995) and post-traumatic stress disorder (e.g., Ehlers, Mayou & Bryant, 1998; Mayou, Ehlers & Bryant, 2002). Additionally, rumination has been found to predict bulimia and substance abuse in female adolescents (Nolen-Hoeksema, Stice, Wade & Bohon, 2007) and has been associated with aspects of borderline personality disorder (Watkins, 2009).

The current thesis is inherently transdiagnostic due to the variables which have been chosen for study. The variables of mindfulness, self and other-compassion are not designed to treat only certain diagnoses. Instead these variables may be appropriate to treat individuals with a variety of mental health difficulties. This represents a strength in treatment. Moreover, it is operating from a different paradigm as seen in the medical model which seeks to isolate diagnoses which each have a specific treatment programme (Persons and Silberschatz, 1998).

*1.3.1 Emotion dysregulation.* Emotions are adaptive and serve important functions (Kring, 2010), for example, letting us know that our values have been disturbed and what our needs in the present moment are. Theorists have argued that individuals who cannot effectively manage their emotional responses to everyday events experience longer and more severe periods of emotional distress that may develop into diagnosable depression or anxiety (e.g., Aldao, Nolen-Hoeksema & Schweizer, 2010; Mennin, Fresco, Holloway, Moore & Heimberg, 2007). Effective emotion regulation strategies may protect against emotional distress, anxiety and depression. For example, the emotion regulation strategy of positive reappraisal has been shown to be negatively related to psychopathology (Carver, Scheier, & Weintraub, 1989; Garnefski & Kraaij, 2006). Emotion regulation has been defined as the ‘awareness and acceptance of emotions, the ability to move toward desired goals in spite of difficult emotions, and the ability to flexibly and adaptively use different regulation strategies, depending on the situation’ (Gratz & Roemer, 2004). In contrast, maladaptive emotion regulation strategies may not allow upset feelings to fully arise and dissipate, maintaining a dysregulated mood (Kring & Sloan, 2009). Emotion regulation is an essential component of mental health and problems regulating emotions are associated with a variety of forms of psychopathology

(Cicchetti, Ackerman & Izard, 1995; Davidson, 2000; Gross, 1998). For example, Mennin and colleagues (2005) conducted a study with non-clinical and clinical individuals who reached the diagnostic criteria for GAD. They found that these individuals exhibited difficulties understanding emotions, negative reactivity to emotions, and an inability to self-soothe following the experience of a negative emotion in comparison to healthy control participants. Furthermore, these emotion regulation difficulties were predictive of GAD status even when controlling for worry, anxiety, and depressive symptom severity. Additionally, another study found that emotion regulation difficulties reliably predicted GAD above and beyond the experience of non-clinical panic attacks and panic disorder (Tull, Stipelman, Salters-Pedneault, & Gratz, 2009).

*1.3.2 Emotion dysregulation across disorders.* It is estimated that emotion dysregulation characterises more than 75% of the diagnostic categories of psychopathology in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994; as cited in Werner & Gross, 2010). Kring's (2008) analysis of the Diagnostic and Statistical Manual of Mental Disorders (fourth edition, text revision, DSM-IV-TR; American Psychiatric Association, 2000) demonstrated that nearly all the diagnostic categories included symptoms that indicate emotional disturbances. The pervasiveness of emotional distress in psychopathology suggests the potential for commonalities across disorders. Kring (2008) suggests it may be the manifestation of emotional distress which differs from disorder to disorder, accounting for the different symptom constellations across disorders. For example, a person with borderline personality disorder may cut themselves to release and regulate distressing emotions, while a person with an eating disorder may restrict food in an attempt to control emotions,

and a person with obsessive compulsive disorder may obsessively wash their hands to manage their experience of unpleasant anxiety. Transdiagnostic treatments are now gaining popularity based on the notion of shared emotional dysregulation patterns underlying psychopathology. For example, Norton and Barrera (2012) conducted a randomised trial comparing a transdiagnostic cognitive-behavioural group with a diagnosis-specific cognitive-behavioural group across anxiety disorders. They found no significant differences between the two types of treatments, indicating they are both effective. Additionally, Mansell, Carey and Tai (2013) have produced a transdiagnostic approach to cognitive behavioural therapy (CBT) manual for clinicians to draw from. Moreover, Barlow et al. (2011) have produced a treatment protocol which aims to give practitioners a comprehensive way to treat patients with a variety of disorders by targeting transdiagnostic processes.

*1.3.3 Emotion regulation strategies.* Coping strategies used to manage distressing emotions have been theoretically mapped and empirically tested. Through this process specific strategies have been labelled as adaptive or maladaptive and this knowledge has been utilised by clinicians treating their patients. Adaptive strategies include reappraisal, problem solving and acceptance (Aldao et al., 2010). Reappraisal involves generating positive or at least benign perspectives. Reappraisal skills are taught as part of CBT for depression and anxiety (Aldao et al., 2010). Problem solving involves attempts to change a stressful situation or contain its consequences. This is not a direct attempt to regulate emotions but can have beneficial effects on emotions by modifying or eliminating stressors (Aldao et al., 2010). Acceptance can be defined as non-judgmental acceptance of emotions. Individuals are encouraged to directly experience problematic emotions learning to

be with their distress and not see unpleasant emotions as an obstruction to a valued and fulfilling life (Blackledge & Hayes, 2001).

In contrast, those with difficulty regulating emotions may experience both over- and under-engagement with their emotions, perhaps vacillating between these two extremes in an attempt to manage overwhelming emotional experiences (Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007). Suppression, avoidance and rumination have been seen as maladaptive responses to stressful events and risk factors for emotional distress and maladaptive behaviours such as self-harm (Chapman, Gratz & Brown, 2006; Gratz, 2006; Najmi, Wegner & Nock, 2006). Emotional suppression has been defined as the conscious inhibition of emotionally expressive behaviour when emotionally aroused (Gross & Levenson, 1993). Gross' model (1998) argues that although emotional suppression may reduce the subjective experience of emotion in the short term, it will be less effective in reducing physiological arousal in the long term. Hayes, Strosahl & Wilson (1999) have developed a model of experiential avoidance, which is the suppression or avoidance of thoughts, emotions, sensations, memories and urges (Aldao et al., 2010). They have proposed that experiential avoidance can lead to dysregulated mood, an increase in negative thoughts and prevent people from taking necessary action (Hayes & Feldman, 2004). Rather than avoid difficult mood states, some individuals ruminate, repetitively focussing on their experiences of the emotion and its causes and consequences (Aldao et al., 2010).

Adaptive emotion regulation strategies such as reappraisal, problem solving and acceptance and maladaptive strategies such as suppression, avoidance and rumination are well studied in the emotion regulation literature. However, mindfulness, self- and other-compassion represent novel variables also worthy of

investigation. The current thesis aims to follow-up on a new line of thinking which links mindfulness, self and also potentially other-compassion as precursors to effective emotion regulation.

#### *1.4 Mindfulness*

*1.4.1 Origins of mindfulness.* Mindfulness has historical roots as a Buddhist meditation practice dedicated to cultivating insight into the transitory nature of all phenomena including ourselves. This concept and experience of ‘no fixed self’ is of particular interest to clinical psychologists as it emphasises individuals as a constant flux or process, flexible, adaptable, malleable to change and able to respond to the present moment creatively. Western psychology has defined mindfulness as cultivating ‘concentration, attention, and non-judging acceptance towards whatever one is experiencing in the present moment’ (Bishop et al., 2004). This includes recognising phenomena such as thoughts and feelings as arising and dissipating, part of constant change, but has not included turning this insight onto the self. It is thought that mindfulness may have a least three possible mechanisms which impact on mental health; enhancing emotion regulation, decreasing rumination and cultivating non-attachment (Coffey, Hartman & Fredrickson, 2010). Mindfulness approaches are not considered relaxation, but rather a form of mental training to reduce vulnerability to reactive modes of mind that might otherwise heighten emotional distress or perpetuate psychopathology (Bishop et al., 2004).

*1.4.2 Mindfulness-based treatments.* Approaches such as mindfulness based cognitive therapy (MBCT) utilise mindfulness practice to reduce the occurrence of relapse in depression (Teasdale et al., 2000; Teasdale & Ma, 2002) and this form of treatment is now recommended in the NICE guidance for recurrent depression. The

MBCT and mindfulness based stress reduction (MBSR) central principles are transdiagnostic and are therefore now successfully applied to a variety of physical and emotional disorders (e.g., Carlson & Garland, 2005; Grossman, Niemann, Schmidt & Wallach, 2004). Dialectical behaviour therapy (DBT) uses mindfulness as an emotion regulation skill which needs to be learned and practised by clients with borderline personality disorder (BPD). DBT incorporates mindfulness alongside other emotion regulation skills. DBT's effectiveness for treating BPD has been explored in two randomised controlled trials (Linehan, Armstrong, Suarez, Allmon, Heard, 1991; Linehan et al, 1999). Similarly to DBT, acceptance and commitment therapy (ACT) seeks to change the individual's relationship to psychological events (such as anxiety) through strategies such as mindfulness rather than focusing on changing the events themselves (Teasdale, 2003). Mindful acceptance is taught as an alternative to experiential avoidance. Mindful acceptance involves applying awareness to one's internal world without trying to change it. For example, anxiety patients are taught to feel and accept anxiety (Hayes, Luoma, Bond, Masuda & Lillis, 2010).

*1.4.3 Proposed mechanisms of mindfulness.* Mindfulness may facilitate aspects of adaptive emotional regulation by increasing the awareness and acceptance of emotional experiences, resulting in a more balanced engagement with those emotions (Hayes & Feldman, 2004). Furthermore, mindfulness is hypothesised to improve the ability to manage negative affect by increasing familiarity and exposure to one's internal life. Gentle but persistent exposure to negative affect may reduce reactivity by way of behavioural habituation. Mindfulness may bring attention and awareness to one's inner life allowing people to then cope with negative affect in effective ways (Shapiro, Carlson, Astin & Freedman, 2006). A new relationship to

difficult emotions may be learned through simply allowing and accepting distressing emotions rather than trying to avoid or escape from upsetting internal experiences, which are a challenging, yet unavoidable part of the human experience (Roemer et al., 2009). Additionally, observing thoughts and feelings coming and going without attaching to pleasant mental states and pushing away negative mental states enhances equanimity. Perhaps unsurprisingly mindfulness has been theoretically and experimentally correlated with emotion regulation in recent literature. Mindfully attuning oneself to emotions represents a potentially beneficial treatment option which could be applied across disorders. In this sense mindfulness could be regarded as a transdiagnostic variable. The current study aims to test a novel mediation model exploring whether emotion dysregulation mediates the relationship between mindfulness and emotional distress.

### *1.5 Self-Compassion*

*1.5.1 Origins of self-compassion.* Mindfulness may facilitate aspects of adaptive emotional regulation by increasing the awareness and acceptance of emotional experiences, resulting in a more balanced engagement with those emotions (Hayes & Feldman, 2004). However, if this awareness is associated with critical judgment it is detrimental (Lischetzke & Eid, 2003; Roemer et al., 2009). This suggests that the quality of self-compassion (being accepting and non-judgemental towards the self) may also be clinically important (Bishop et al., 2004). Historically Buddhism emphasises the practice and cultivation of mindfulness (insight and wisdom) as the necessary precondition for self-compassion (acceptance and kindness) to take root (Sangharakshita, 2004). This has been explored in recent research where changes in self-compassion were predicted by prior changes in



mindfulness (e.g., Beddoe & Murphy, 2004; Birnie, Speca & Carlson, 2010; Neff, 2003a). Buddhist ideas expand on this hypothesis by stating that mindful awareness at its most developed *is* compassion (Sangharakshita, 2004).

Researchers have begun to examine self-compassion as an adaptive form of self-to-self relating (Gilbert & Irons, 2005; Leary, Adams & Tate, 2005; Neff, 2003; Neff, Hseih, & Dejitthirat, 2005). Neff (2011) has defined self-compassion as ‘treating oneself with kindness, recognising one’s shared humanity, and being mindful when considering negative aspects of oneself’. Neff (2003) has operationalised this definition into three main components: ‘Self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification’. This definition is non-evaluative and highlights interconnectedness and common humanity. The emphasis on the common human experience is thought to counter the tendencies towards narcissism, self-centeredness, and downward social comparison that have been associated with attempts to maintain self-esteem (Neff, 2003a).

Neff’s (2003b) research has indicated that self-compassion is negatively associated with self-criticism, depression, anxiety, rumination, thought suppression, and neurotic perfectionism, and positively associated with life-satisfaction, social connectedness, and emotional intelligence. Gilbert (2005) suggests that self-compassion enhances well-being because it helps individuals to feel cared for, connected, and emotionally calm. It is proposed that self-compassionate people are able to ‘maintain emotional equanimity while seeing themselves accurately because they compassionately recognise their own imperfect humanity, leading to a sense of acceptance and calm’ (Leary, Tate, Adams, Allen & Hancock, 2007).

*1.5.2 Self-compassion-based treatments.* DBT incorporates mindfulness and emotion regulation skills, alongside self-soothing skills encouraging patients to take a kind and compassionate view of, and behaviour towards themselves. Compassion Focussed Therapy (CFT) uses interventions such as a loving-kindness and compassion meditation, imagery and diary writing which show considerable promise in alleviating emotional distress and promoting well-being (Gilbert & Procter, 2006). Patients are taught to think about self-compassion as a skill that can be learned and self-judgment as a habit that can be overcome (Barnard & Curry, 2011).

CFT has been shown to be effective in two small-scale studies. Gilbert and Procter (2006) employed a pre/post group design to look at changes in six patients, with a range of psychiatric diagnoses. Participants showed significant reductions in self-reported depression, anxiety, shame, submissive behaviour, feelings of inferiority, and in the frequency, power, and intrusiveness of self-critical thoughts. All reported significant increases in ability to be self-soothing. Participants reported increased awareness of their hostility to self, valued focusing on generating feelings of warmth and not just on accuracy of thoughts, and reported improvements in tolerating their distress. In the second study Mayhew and Gilbert (2008) conducted a series of three case studies of CFT with patients who had been diagnosed with schizophrenia. Patients showed pre/post decreases in self-reported depression, anxiety, psychoticism, paranoia, obsessive–compulsive symptoms, and interpersonal sensitivity. However, larger samples in clinically controlled trials have not been explored.

*1.5.3 Proposed mechanisms of self-compassion.* Self-compassion is a concept closely linked with mindfulness and is thus likely to also have an impact on emotion regulation. Neff's (2003b) study found that self-compassion had a significant

negative correlation with both rumination and thought suppression, both of which are thought to be maladaptive emotion regulation strategies. In addition, self-compassion was found to have a significant positive correlation with the emotional processing subscale of the Emotional Approach Scale (EAS: Stanton, Kirk, Cameron & Danoff-Burg, 2000), suggesting that self-compassionate individuals may be more likely to open-up-to and approach emotions, which is thought to be an adaptive emotion regulation strategy. Additionally, Gilbert (1989) has proposed an evolutionary theory where self-compassion deactivates the threat system (associated with feelings of insecurity, defensiveness and located in the limbic system within the brain) and activates the self-soothing system (associated with feelings of secure attachment, safeness, and located in the oxytocin–opiate system of the brain). The self-soothing qualities of self-compassion are thought to engender greater capacities for intimacy, effective emotion regulation, exploration and successful coping with the environment (Gilbert, 1989, 2005). Neff (2003a) argues that a self-compassionate approach means that emotional distress is not avoided but instead approached with kindness, understanding and a sense of shared humanity. Thus, negative emotions are transformed into a more positive feeling state. This may allow for a clearer understanding of the immediate situation and ‘the adoption of actions that change oneself and/or the environment in appropriate and effective ways’ (Neff, 2003a). In this context, self-compassion may be viewed as an adaptive emotion regulation strategy, transforming emotional distress through activating the body’s self-soothing system and potentially improving self-to-self and interpersonal interactions. Recent theoretical and experimental literature has begun to correlate self-compassion with emotion regulation because of its soothing qualities. Learning to be more self-compassionate represents a potentially beneficial treatment option

which could be applied across disorders. In this sense like mindfulness, self-compassion could be regarded as a transdiagnostic variable. The current study aims to test a novel mediation model exploring whether emotion dysregulation mediates the relationship between self-compassion and emotional distress.

## *1.6 Other-Compassion*

*1.6.1 Origins of other-compassion.* While mindful awareness and self-compassionate acceptance of emotions may be important in effective emotion regulation and the reduction of emotional distress, other-compassion may also be an important factor. Historically in the Buddhist tradition self-compassion is developed as the first stage of loving-kindness. This is followed by extending un-biased intentions of wellbeing to all living beings. The common humanity component inherent in self-compassion demonstrates how developing compassion towards the self should foster social connectedness and compassion for others (Barnard & Curry, 2011). Initial empirical work supports this theory. Neff (2003a) found that self-compassion was significantly correlated with self-reported social connectedness in a sample of 391 undergraduates. Moreover, Neff (2003a) found that individuals with the highest levels of self-compassion were most likely to rate themselves as being equally kind to self and others. This is consistent with Longe et al.'s (2009) finding that intentionally cultivating self-compassion stimulates parts of the brain associated with compassion more generally. It is conceivable that compassion towards others may flow out of cultivating compassion for self. Truly having compassion for oneself entails desiring health and well-being for oneself, which means gently encouraging change where needed and rectifying harmful or unproductive patterns of behaviour. From learning to understand, care for and respect your own self, body,

health and well-being naturally comes a deepening care and respect for others happiness and well-being (Ray, 2008).

It is also possible that the reverse could also be true in that the Dalai Lama has stated that ‘the more we cultivate altruisms and a sense of caring for others, the greater the immediate benefits we ourselves receive’ (as cited in Goleman, 2003). It is therefore possible that practicing compassion for others may be able to repair compassion for the self. One described pathway through which other-compassion may be related to personal wellbeing is by improving the perception (Lemay & Clark, 2008; Piferi & Lawler, 2006) and actualisation (Crocker & Canevello, 2008) of available social support. Crocker & Canevello (2008) suggest that compassionate individuals create supportive environments by fostering relationships with those who reciprocate support, influencing personal wellbeing indirectly.

Neff (2003a) has defined other-compassion as ‘being touched by the suffering of others, opening one’s awareness to others’ pain and not avoiding or disconnecting from it, so that feelings of kindness towards others and the desire to alleviate their suffering emerge’. This definition has been adopted from Neff’s (2003a) model of self-compassion which includes the three components of kindness, common humanity, and mindfulness. However, the six-factor structure of the Compassion Scale (CS) which measures other-compassion is slightly different to the six-factor structure of the Self Compassion Scale (SCS); Kindness versus Indifference, Common Humanity versus Separation, and Mindfulness versus Disengagement. In the SCS a lack of kindness for self exhibits itself in a critical and judging internal voice. A lack of kindness for others suggests a cold and indifferent view projected to others. If an individual does not feel an internal sense of connection with others (common humanity) then they may feel separate or different from others. An

inability to balance an emotional response when encountering the suffering of others may lead one to retract, disengage, or deny that suffering (Pommier, 2010).

*1.6.2 Other-compassion based treatments.* DBT includes developing compassion towards others through teaching interpersonal skills alongside mindfulness and emotion regulation skills. ACT encourages patients to let go of attachments to negative self-beliefs and move towards values-based actions. These actions are determined by the patients themselves who often make reference to kindness, compassion and generosity to others as key parts of their committed values (Harris, 2009). Furthermore, as previously noted CFT encourages patients not only to be compassionate towards themselves, but also to act compassionately towards others (Gilbert & Procter, 2006). As seen in DBT, ACT and CFT, cultivating compassion for others is almost a treatment afterthought with the development of mindfulness and self-compassion having greater emphasis. It is possible that other-compassion may be an important transdiagnostic treatment component in a wide variety of emotional disorders. There is only one research study which has measured other-compassion during treatment (Neff & Germer, 2012) and this article is reviewed in the literature review section of this chapter.

*1.6.3 Proposed mechanisms of other-compassion.* In Buddhist traditions, it has long been suggested that other-compassion is linked to happiness (e.g., Dalai Lama, 2002; Ladner, 2004; Wang, 2005) and may be protective against negative emotions such as fear, anger, envy, and vengeance (Goleman, 2003). If someone has difficulties being compassionate towards others they may be operating in Gilbert's (1989) proposed threat system. They may be fixated on scanning for threats and looking for a way to escape or avoid any perceived threats. This 'survival' mode impacts on the ability to manage emotions and clearly process information (Ford,

2009). Taking a compassionate stance towards others may de-activate the threat system and activate the self-soothing system. Adaptive emotion regulation may involve employing other-compassion. This strategy may transform difficult interpersonal emotions such as resentment, anger and blame into a kindly non-judging acceptance of others providing inner peace. The Dalai Lama has said ‘compassion is like a medication that restores serenity when one is very agitated, the great tranquilizer is compassion’ (as cited in Goleman, 2003).

Other-compassion has been proposed to relate to emotion regulation in two ways. Firstly, individuals with limited other-compassion may over attend to their own feelings as they identify too closely with the pain of another. They may then feel overwhelmed, distressed and unable to help the sufferer (Lazarus, 1991). Secondly, limited other-compassion may be observed as disengagement. Avoiding suffering in others that could elicit pain, anger, sadness in oneself could be seen as a maladaptive emotion regulation strategy, where emotional exposure and habituation is unable to occur (Lazarus, 1991). While recent theoretical and experimental literature has begun to correlate self-compassion and mindfulness with emotion regulation there is no body of work looking at other-compassion and its relationship with emotion regulation. Learning to be more compassionate towards others represents a potentially beneficial treatment option which could be applied across disorders. In this sense like mindfulness and self-compassion, other-compassion could be regarded as a transdiagnostic variable. The current study aims to address this gap in the literature by including other-compassion as a variable. Additionally, a novel mediation model will explore whether emotion dysregulation mediates the relationship between other-compassion and emotional distress.

### *1.7 Relationships Between Mindfulness, Self- and Other-Compassion, Emotion Dysregulation and Emotional Distress*

Research into the mechanisms and mediators of mindfulness and compassion is in its infancy. To date not a lot is known about these variables and how they relate to emotion dysregulation and emotional distress. This final section of the thesis aims to conduct a thorough systematic literature search and review, followed by conclusions outlining preliminary ideas about the relationships between these variables.

### *1.8 Loving-Kindness Research*

While compassion is one of the four positive Buddhist emotions, loving-kindness, equanimity and sympathetic joy are the three others. Each emotion is unique and worthy of psychological research. Like self-compassion, loving-kindness is the other Buddhist emotion which has been studied in psychological research. For example, a study by Hutcherson, Seppala and Gross (2008) recruited 93 participants and randomized subjects to receive either a loving-kindness meditation (LKM) exercise ( $n = 45$ ) or an imagery condition ( $n = 48$ ). Participants in the LKM condition were instructed to imagine sending two loved ones their love, followed by redirecting these feelings of love toward a photograph of a stranger. Participants in the imagery condition were instructed to imagine two acquaintances and focus on their physical appearance, followed by looking at a photograph of a neutral stranger. Instructions of both conditions lasted for about seven minutes. The dependent variables included ratings of positive and negative mood and participants' explicit and implicit evaluative responses to 6 photographs (picture of participant, a close other, three neutral strangers, and a lamp) before and after the visualization



(LKM or imagery). For each picture, participants indicated how connected, similar, and positive they felt toward the subject on a 7-point Likert scale. The results revealed a significantly greater effect of LKM on both explicit and implicit positivity toward neutral strangers relative to imagery. LKM was also associated with greater implicit positivity toward the self. These findings suggest that even a brief (7-minute) exercise of LKM was sufficient to induce changes of small to moderate effect size.

Fredrickson, Cohn, Coffey, Pek and Finkel (2011), wanted to test whether people's daily experiences of positive emotions compound over time to build personal resources. He experimented with 139 working adults, half of whom were randomly-assigned to begin a practice of LKM. Results showed that this meditation practice produced increases over time in daily experiences of positive emotions, which, in turn, produced increases in a wide range of personal resources (e.g., increased mindfulness, purpose in life, social support, decreased illness symptoms). In turn, these increments in personal resources predicted increased life satisfaction and reduced depressive symptoms.

The first study indicates that feelings of loving-kindness towards the self and others can be generated in meditation and may only need a short time to manifest. The second study indicates that daily, regular LKM increases positive emotions over time which, in turn, increases personal resources. While loving-kindness appears to be an important Buddhist emotion it is not the only one worthy of psychological research. LKM is a technique used to increase feelings of warmth and caring for self and others (Salzberg, 1995). Compassion meditation involves techniques to cultivate compassion, or deep, genuine sympathy for those stricken by misfortune, together with an earnest wish to ease this suffering (Hopkins, 2001). Thus other-compassion

contains an active component where people can develop a desire to ease their own and others suffering without being overwhelmed or paralysed by encountering that suffering. Additionally other-compassion offers the chance to develop an understanding of common human experience or interconnectedness.

### *1.9 Systematic Literature Search*

A computer-assisted literature search was conducted to identify articles for the current chapter. The following databases were searched: PsychINFO (1806 to present), MEDLINE (1950 to present), EMBASE (1980 to present), and CINAHL (1981 to present) through the National Library for Health. Each of the variables under consideration has an enormous literature of its own. Given that the current study's interest is in the relationship of these variables the literature search focussed on finding studies which examined the relationships between variables only. This focus will exclude studies which include anxiety *or* depression and those studies which may also be relevant but did not include the relevant search term in the title. The keyword and Boolean connectors used were:

1. Mindful\* (Title)
2. Compassion OR Self-Compassion (Title)
3. "Emotion\* Regulation" OR "Emotion\* Dysregulation" (Title)
4. Anxiety AND Depression OR Psychopathology (Title)
5. Search terms 1 AND 3 (combined), 2 AND 3 (combined), 1 AND 2 (combined), 1 AND 2 AND 4 (combined), 3 AND 4 (combined).

Combining all of the above searches resulted in 127 articles. Duplicates were removed, leaving 112 articles. Abstracts were scanned for relevant key words,

populations studied, questionnaires used, and analyses. Once paper copies of relevant articles were obtained, reference lists were scanned for further relevant articles, however no additions were found.

Inclusion and exclusion criteria were applied at this stage. To be included in the review, studies must have explored the relationship between either self-compassion and emotion regulation or self-compassion and anxiety, depression, psychopathology OR mindfulness and emotion regulation or mindfulness and anxiety, depression, psychopathology. A range of client populations including mental health patients and analogue populations were of equal interest. Studies were excluded if they were not published in a peer reviewed journal. Two exceptions were made to this rule. Firstly, a poster presentation (Erisman et al., 2005) was included despite it not having been published, because the authors are esteemed researchers in the field of emotion dysregulation and the data is particularly relevant to the literature review. Secondly, a thesis published on-line (Pommier, 2010) is included as it contained the validation results of the other-compassion questionnaire used in the current study. Only quantitative studies were included. Finally, 14 papers met the criteria and are included in this review. The papers reviewed include experimental and cross-sectional studies exploring the variables used in the current study. Little is known about the mechanisms of the current study's predictor variables on emotion dysregulation and emotional distress. The literature reviewed begins to reveal a picture of how mindfulness and compassion may be involved in emotion regulation.

### *1.10 Systematic Literature Review*

*1.10.1 Studies exploring the relationship between mindfulness and emotion dysregulation/regulation.* Arch and Craske (2006) investigated whether a 15 minute

focused breathing induction would decrease the intensity and negativity of emotional responses to affective picture slides. Twenty undergraduate students in a focused breathing induction were compared with two other groups (unfocused attention induction and a worry induction). The results of this laboratory study provide initial data that under the conditions of induced (state) mindfulness participants were better able to view more negative slides, reported significantly less affect on negatively viewed slides and significantly rated neutral slides more positively than those in the other two groups ( $t [1,34] = -3.596, p < .002$  and  $t[1,37] = -2.426, p < .05$ ). This was an innovative laboratory experiment designed to measure the impact of state mindfulness in capacity to regulate emotions. However, the sample size was relatively small with 20 participants in each group. This often meant the study showed non-significant results where a larger sample size may have produced significant results. Furthermore, the experimenter left participants alone to complete tasks to reduce demand characteristics. However, this meant the study was left with missing data which further limited the power to demonstrate consistently significant findings.

Erisman and Roemer (2010) conducted an experiment to test whether mindfulness may reduce psychological symptoms through enhancing emotional regulation. An analogue sample of individuals who reported high levels of difficulties in emotion regulation were randomly assigned to a 'mindfulness' (N=15) or 'control' (N=15) condition. The mindfulness condition included a mindfulness exercise and prompts throughout the experiment to accept emotions and not try to change them. Block randomisation was thorough and included balancing groups on trait mindfulness scores, gender, and racial minority status. Participants in the mindfulness condition reported significantly greater positive affect in response to the

positive film ( $F [1,27] = 7.20, p < .05, \eta p^2 = .21$ ), more adaptive regulation (with a medium to large effect size,  $F [1, 27] = 3.50, p = .07, \eta p^2 = .11$ ) in response to the affectively mixed clip, and also reported significantly less negative affect immediately following this clip ( $F [1, 27] = 5.62, p < .05, \eta p^2 = .17$ ). However, when examining the reported statistics ‘adaptive regulation’ as written above did not meet significance ( $p = .07$ ). Owing to the small sample size the authors analysed effect sizes for each analysis. The partial eta squared ( $\eta p^2$ ) effect sizes indicate medium to large effect sizes ( $\eta p^2 = .06$  is considered a medium effect size, and  $\eta p^2 = .14$  is considered a large effect size; Cohen, 1977). However, many results were non-significant, including no differences in physiological arousal between groups. This may have been because the ‘mindfulness induction’ was too brief to have any real effects and that the sample size was too small.

Coffey et al. (2010) tested theory driven models of mindfulness and emotion regulation. Path analysis supported the hypothesis that attention to one’s experience ( $z = 3.11, p < 0.001$ ) and acceptance of that experience ( $z = 8.53, p < 0.001$ ) jointly and significantly influenced an individual’s clarity about their experience. Clarity about one’s experience in turn significantly predicted one’s ability to effectively regulate negative affect ( $z = 2.93, p < 0.01$ ), as did both attention ( $z = 2.79, p < 0.01$ ) and acceptance ( $z = 5.70, p < 0.001$ ) directly. The model explained 43% of the variance in clarity and 50% of the variance in negative emotion regulation. A second study developed these findings by exploring the mediating roles of clarity about one’s internal life, the ability to manage negative emotions, non-attachment (or the extent to which one’s happiness is independent of specific outcomes and events), and rumination. These aspects were explored in terms of their relationship with psychological distress and flourishing mental health. Attention, clarity, negative

emotion regulation, and rumination exerted significant direct effects on psychological distress and flourishing. For a correlational design, this study maintained a high level of scientific rigour recruiting a large analogue sample size and conducting path analysis to explore the mechanisms of mindfulness on emotion regulation.

Jermann et al. (2009) translated a mindfulness measure into French and examined its psychometric properties. They also conducted path analysis using an analogue sample (N=240) of high school students and community participants. They found mindfulness (attention and awareness in daily life) was significantly related to depressive symptoms, both directly and through two kinds of emotion regulation strategies: self-blame (non-adaptive regulation strategy;  $b = -0.06$ ) and positive reappraisal (adaptive regulation strategy;  $b = -0.03$ ). Their findings indicate that there was a negative relationship between the degree to which one is attentive and aware in daily life and the severity of depressive symptoms. Although cross-sectional in design, meaning causality between variables cannot be attributed, this study provides exploratory data aiming to describe the mechanisms of mindfulness and its role in emotion regulation.

#### *1.10.2 Study exploring the impact of a lack of mindfulness (mind wandering).*

While there is research evidence that better mindfulness leads to better emotion regulation, there is also research indicating that lower mindfulness (higher levels of “mind wandering”) may lead to unhappier mental states. Killingsworth and Gilbert (2010) argue that “stimulus-independent thought” or “mind wandering” appears to be the brain’s default mode of operation. They wanted to test whether a wandering mind is an unhappy mind. To do this they used an experience sampling method utilising a web application for the iPhone. They analysed samples from 2250 adults

from around the world who were randomly assigned to answer a happiness question ‘How are you feeling right now?’ an activity question ‘What are you doing right now?’ and a mind-wandering question ‘Are you thinking about something other than what you are currently doing?’. Multilevel regression revealed that people were significantly less happy when their minds were wandering than when they were not (slope  $b = -8.79$ ,  $p < 0.001$ ), regardless of activity. Participants were no happier when thinking about pleasant topics than about their current activity ( $b = -0.52$ , not significant) and were considerably unhappier when thinking about neutral topics ( $b = -7.2$ ,  $p < 0.001$ ) or unpleasant topics ( $b = -23.9$ ,  $p < 0.001$ ) than about their current activity. Time-lag analyses suggested that mind wandering was generally the cause, and not merely the consequence, of unhappiness. The strengths of this study are real-time emotional sampling *in vivo* with a large sample size. However, there were weaknesses in the recruitment process and inclusion and exclusion criteria were not used. Participants volunteered for the study by signing up at a website and the authors reported 27 of the participants in the sample selected a birth date over 18 on one question but indicated that they are under 18 when asked their exact birthdate. This indicates a potentially corrupt population sample. Additionally, it is unclear why they reported a research question ‘participants were no happier when thinking about pleasant topics than about their current activity’ with a non-significant result without any discussion on what this may indicate.

*1.10.3 Studies exploring the relationship between self-compassion and emotion dysregulation/regulation.* Neff, Kirkpatrick and Rude (2007) examined the relation of self-compassion to psychological health in two studies. Study 1 ( $N = 91$ ) used undergraduates (22 men and 69 women). They found that self-compassion was associated with significantly less anxiety after considering one’s greatest weakness ( $r$

= .21,  $p < .05$ ) in a mock written job interview task. The same was not true for self-esteem ( $r = .11$ ,  $p = .32$ ). This lends evidence to Neff's (2003a) proposal that self-esteem is based on the neurotic aspects of narcissism, self-centeredness and downward social comparison, whereas self-compassion leads to true self-worth. Self-compassion was also linked to connected versus separate language use when writing about weaknesses. Study 2 found that those who experienced an increase in self-compassion also experienced increased social connectedness and decreased self-criticism ( $r = -.61$ ,  $p < .01$ ), depression ( $r = -.31$ ,  $p < .05$ ), rumination ( $r = -.40$ ,  $p < .01$ ), thought suppression ( $r = -.55$ ,  $p < .01$ ), and anxiety ( $r = -.61$ ,  $p < .01$ ) over a one-month period after taking part in a Gestalt two-chair exercise. However, it is unclear how the 'dose' of one brief Gestalt two-chair exercise may have had lasting effects on self-compassion up to three weeks later. Additionally, there was a large gender imbalance in this study and a relatively small sample size.

Leary, Tate, Adams, Allen and Hancock, (2007) explored self-compassion and its role in negative events in five studies. In the study which related to emotion regulation, 117 college students answered questions about their lives on a web-based questionnaire every four days for three weeks. Through hierarchical regression the authors found that self-compassion was significantly positively related to participants' ratings of how well they handled a difficult situation ( $[YOI = 3.60]$ ,  $t[107] = 37.38$ ,  $p < .001$ ; where  $YOI$  is the effect of self-compassion scores). High self-compassion was also associated with rating the day on which a negative event happened more positively ( $[YOI = 0.07]$ ,  $t[107] = 2.35$ ,  $p < .02$ ). Self-compassion scores predicted trying to understand one's emotions when the event in question was one's fault ( $BI = .08$ ,  $p < .01$ ) but not when it was not one's fault ( $BI = .02$ ,  $ns$ ; where  $BI$  is a slope representing the effects of fault versus no-fault instruction). Finally,



there was a trend towards self-compassion being inversely related to self-conscious emotions (e.g., embarrassment, shame, humiliation) when events were the participants' fault ( $BI = .02, ns$ ). This study provides useful data on self-compassion related to aspects of emotion regulation. The strength of this study lies in its interval time sampling method which captured participants' reactions to real life events lending to ecological validity. However, un-standardised emotion questionnaires were used, increasing the likelihood of measurement error. Additionally, the psychology students may have wanted to answer questions in a socially desirable manner as by participating they earned credit towards completing their course.

Vettese, Dyer, Li and Wekerle (2011) explored whether individual differences in self-compassion would play a role in loosening the associations among childhood maltreatment severity and later emotion regulation difficulties. The sample consisted of 16 – 24 year olds ( $N=81$ ) seeking treatment for substance misuse. Self-compassion was negatively associated with emotion regulation difficulties ( $r = -.64, p<.001$ ) and with childhood maltreatment ( $r = -.34, p<.01$ ). Self-compassion predicted emotion dysregulation above and beyond maltreatment history, current severity of psychological distress, and problem substance use ( $R^2 \text{ Change} = .14; \beta = -.44; t = 5.25, p<.001$ ). In addition, self-compassion mediated the relationship between childhood maltreatment severity and later emotion dysregulation ( $R^2 = .48; F = 71.37, p<.001; \beta = -.69, p<.001$ ). This was the first study to examine the predictive nature of self-compassion on emotion dysregulation, over and above other predictors such as maltreatment history, psychological distress, and problem substance use. However, participants were likely to have been mandated to treatment by the court system meaning there was selection bias inherent in the participants included in the study.

#### *1.10.4 Mindfulness and self-compassion combined in relation to emotion*

*dysregulation / regulation.* Erisman et al. (2005) in a poster presentation examined the correlational and predictive nature of both mindfulness and self-compassion in emotion dysregulation. A large undergraduate sample was used (N=404). Mindfulness and self-compassion scores predicted total emotion dysregulation scores over and above the variance accounted for by stress, depression, and anxiety ( $R^2 \Delta = .06, p < .001$ ). Self-compassion was a better individual predictor of the emotion dysregulation total score than mindfulness ( $\beta = -.22, p < .001$  and  $\beta = -.17, p < .001$  respectively). However 63 more females (N=254) than males (N=191) participated in the study. Preliminary data suggests there are neuronal differences in the way men and women regulate their emotions (McRae, Ochsner, Mauss, Gabrieli & Gross, 2008) and that women tend to have lower levels of self-compassion and mindfulness (Neff, 2003) thus a gender balanced sample, or separated male/female statistics would have been preferable. The authors introduce mindfulness and self-compassion as a unitary concept. While interdependent there is evidence from the factor analysis of mindfulness and self-compassion scales which suggests they are separate theoretical concepts (e.g., Neff, 2003a; Baer, Smith, Hopkins, Krietemeyer & Toney, 2006) and they are treated as such throughout the mindfulness/self-compassion literature.

Roemer et al. (2009) reported two studies investigating diminished levels of mindfulness and self-compassion and their effects on difficulties in regulating emotion. Using an undergraduate student population (N=411), the correlation between the emotion dysregulation scale and self-compassion scale was particularly high ( $r = -.68$ ) compared with the emotion dysregulation scale and mindfulness scale ( $r = -.48$ ). This suggests that emotion regulation difficulties may be particularly

associated with self-compassion. The second study correctly classified 87.5% of GAD cases by using the predictor variables of mindfulness, self-compassion and emotion dysregulation. However it is unclear how a clinical group and matched non-clinical group with only 16 participants in each group is a large enough sample size to complete logistic regression. Additionally, this study was completed by Roemer and Erisman, the same researchers as the study reviewed above. These authors discuss mindfulness and self-compassion as different aspects of a unitary concept which is in contrast with the rest of the literature reviewed here.

Van Dam et al. (2011) found that the Self-Compassion Scale (SCS; Neff, 2003b) was a more robust predictor (10-27% of outcome variables) of anxiety, depression, worry and quality of life than the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) (1-3% of outcome variables). The Self-Judgment and Isolation subscales of the SCS had particular predictive utility. This indicates that withdrawing and becoming self-judgmental may be related to emotional distress disorders such as anxiety and depression. It may also indicate that other-compassion may be an important predictor variable which this study did not explore. Overall, this study was of high quality, recruiting over 500 participants from multiple western and non-western countries from around the world. However, it investigated relationships between variables only and did not look for mediators or mechanisms of the relationship between mindfulness and self-compassion with emotional distress.

*1.10.5 Other-compassion studies.* Only two studies have used the other-compassion scale (CS; Pommier, 2010) which is also planned for use in the current study. This indicates a gap in the literature where other-compassion is concerned. The first study was Pommier's (2010) thesis validation study which has not yet been published. The second study is Neff and Germer's (2012) exploration of other-

compassion after taking part in a Mindful Self-Compassion (MSC) programme. In the first study Pommier (2010) asked 439 undergraduate students (153 men; 286 women;  $M$  age 20.6 years;  $SD = 1.82$ ) to complete questionnaires related to other-compassion online. Other-compassion was significantly correlated with compassionate love ( $r = .54, p < 0.01$ ) wisdom ( $r = .56, p < 0.01$ ), social connectedness ( $r = .41, p < 0.01$ ), and empathy ( $r = .65, p < 0.01$ ) providing support for convergent validity. Other-compassion was reported to be significantly negatively correlated with the personal distress scale from Davis' Interpersonal Reactivity Index (IRI; 1980). This lends support to other-compassion being associated with a lack of emotional distress. However, the author did not report the statistical result in the paper. Findings indicated that there was no association between self-compassion and compassion ( $r = .01, p = .69$ ). Those low in self-compassion (based on a median split,  $M = 2.60$ ) had high other-compassion scores ( $M = 3.84$ ). Those with high levels of self-compassion ( $M = 3.50$ ) had other-compassion scores that were relatively similar ( $M = 3.81$ ). While self-compassionate people were equally kind to themselves and others, those lacking in self-compassion reported much higher levels of compassion toward others. This may indicate that those lacking in self-compassion may put the needs of others before their own. This questionnaire validation study employed a large sample size meaning that reliable correlational analysis could be conducted. However, this study has not yet been peer reviewed and published.

Neff and Germer (2012) evaluated the effectiveness of a Mindful Self-Compassion (MSC) programme with 24 participants. This was an 8-week programme designed to train people to be more self-compassionate. The intervention group ( $N=24$ ) were compared with a waiting list control group ( $N=27$ ). The

intervention group demonstrated significant improvements in all outcomes (all at  $p < .05$ ) including increased self- and other-compassion, mindfulness and life satisfaction. When compared with the waiting-list control group, the intervention group demonstrated significantly greater gains in self-compassion (large effect size), other-compassion (medium effect size), mindfulness (medium effect size) and life satisfaction (medium effect size), as well as larger decreases in depression (large effect size), anxiety (medium effect size), stress (small effect size) and avoidance (medium effect size). These results were maintained at six months and one year after completion of the programme. Additionally, hierarchical regression analyses assessed the contribution of pre/post residual change in self-compassion. Increased self-compassion was significantly associated with other-compassion gains ( $F = .31, p < .05$ ). Residual change in mindfulness was entered into step two of the regression. Mindfulness was found to contribute significant additional variance in terms of compassion for others ( $F = .37, p < .07$ ). This study shows promising results that developing self-compassion can lead to improvements in mindfulness and other-compassion as well as a decrease in emotional distress. However, the sample size was small and it is unclear how it met the criteria for hierarchical regression. Furthermore, only 15 out of the 24 participants completed the questionnaires at the one-year follow-up. This self-selection may have skewed results toward those who were especially satisfied with the benefits they derived from the program (Neff & Germer, 2012).

### *1.11 Conclusion*

Theorists have argued that individuals who cannot effectively manage their emotional responses to everyday events experience longer and more severe periods

of emotional distress that may develop into diagnosable depression or anxiety (e.g., Aldao et al., 2010; Mennin et al., 2007). Effective emotion regulation may protect against emotional distress, anxiety and depression. Mindfulness, self-compassion and other-compassion show promise as variables which can be clinically applied to enhance clients' emotional awareness and intelligence, distress tolerance and acceptance of a broad range of emotions. These variables are transdiagnostic as they could be applied across disorder. They also represent a gap in the current literature and a novel approach to exploring effective emotion regulation.

Bishop (2004) argues that mindfulness and compassion are not mood regulation strategies in themselves, 'but rather a form of mental training to reduce cognitive vulnerability to reactive modes of mind that might otherwise heighten stress and emotional distress or that may otherwise perpetuate psychopathology'. The current chapter has argued that cultivating mindfulness and compassion in meditation is indeed mental training. There is good evidence that it may reduce cognitive vulnerability to reactive modes of mind (e.g., Kenny & Williams, 2007; Williams, 2008; Raes & Williams, 2010). It is also possible that mindfulness and compassion can be used "off the meditation cushion" and during in vivo encounters when one wants to regulate emotions. In these situations, mindfulness would be used to pay attention to the sensations of emotions as they enter the body and to appraise them in a non-judgemental and accepting manner. This may increase awareness and clarity of emotional experience. Compassion for self and others may then be used as an emotional regulation strategy, employing kindness, acceptance, thoughts of common humanity, and remaining engaged. This may deactivate the threat system allowing the person to self-soothe and transform destructive emotions such as anger and jealousy into understanding, loving-kindness and compassion (Gilbert, 1989). In

this sense the aim is not to remove our experience of negative emotions but to cultivate calming and positive emotions across situations (Goleman, 2003).

### *1.12 Thesis Rationale and Variables Chosen*

There are only preliminary ideas about how mindfulness and self- and other-compassion relate to emotion dysregulation and emotional distress. An analysis of the recent empirical research literature has demonstrated that self-compassion is a better predictor variable than mindfulness in emotion dysregulation and emotional distress (Van Dam et al., 2011; Erisman et al., 2005). No research has investigated whether other-compassion contributes further variance gains, or whether it is a unique predictor variable in the proposed outcome measures. This indicates a gap in the literature which the current thesis aims to begin addressing.

Mindfulness was chosen as a predictor variable for the current study as variation in attention and awareness may predict someone's ability to recognise emotional states. Paying attention to emotional states may relate to the first part of the process of emotion dysregulation as defined in the current study: awareness, acceptance and clarity (Gratz & Roemer, 2004). Mindfulness is also amenable to improvement through mindfulness skills training, such as through MBCT and MBSR programmes (e.g., Carlson & Garland, 2005; Grossman, Niemann, Schmidt & Wallach, 2004). Considering the theoretical position that mindfulness may enhance adaptive emotion regulation, it could be expected that an individual's emotion regulation skills would improve, alongside a reduction in emotional distress, as a result of practicing mindfulness (state) or through high (trait) mindfulness.

Self-compassion was chosen as a predictor variable for the current study as previous research found it was a robust predictor of symptom severity in anxiety and depression (Van Dam, Sheppard, Forsyth and Earleywine, 2011). Furthermore, a lack of self-compassion may predict emotion dysregulation (e.g., Leary et al., 2007). Self-compassion may relate to the ‘regulation strategy’ stage of the process of emotion regulation as a flexible and adaptive way of accepting and transforming emotions. It may act as an adaptive strategy designed to deactivate the threat system (Gilbert & Procter, 2006) allowing individuals a space to control impulses and move towards their goals. Self-compassion is also amenable to improvement through clinical intervention (Neff & Germer, 2012). The aim of Gilbert’s Compassion Focussed Therapy (CFT), for example, ‘is to develop a new self-to-self relationship based on warmth, care and compassion for self’ (Gilbert & Procter, 2006). Self-compassion is related to mindfulness as awareness of emotions and inner experiences is thought to be the necessary pre-cursor for self-compassion to develop (Beddoe & Murphy, 2004; Birnie et al., 2010; Neff, 2003a). Moreover, self-compassion may activate the self-soothing opiate system lending itself to effective emotion regulation and a reduction in emotional distress (Gilbert, 1989).

Other-compassion was chosen as a predictor variable for the current study as successful emotion regulation may not just depend on self-to-self relating but may also involve how we relate to others. Destructive emotions such as resentment, anger and fear may arise and find an object in another person. Attachment of difficult emotions towards others can be emotionally distressing and difficult to let go of. Dysregulated emotions towards others, just like dysregulated emotions towards the self, activate the body’s threat system (Gilbert, 2004). Thus developing compassion towards others may act as an adaptive strategy designed to deactivate the threat



system. Compassion to others is also amenable to improvement through clinical intervention, for example, using CFT to develop and work with experiences of inner warmth, safeness and soothing directed at the self and others (Gilbert, 2009). This variable was of particular interest due to its unknown relationship with emotion dysregulation and emotional distress.

### *1.13 Research Questions and Hypotheses*

*1.13.1 Research question one. Is there a relationship between self-compassion and other-compassion?* There will be no relationship between self-compassion and other-compassion. This is based on Pommier's (2010) finding that scores on the self-compassion and other-compassion measure were unrelated in an analogue sample of 439 undergraduate students.

*1.13.2 Research question two. Is there a relationship between self-compassion and mindfulness?* Self-compassion will be positively correlated with mindfulness. One study found that Neff's self-compassion scale was positively correlated with the mindfulness attention and awareness scale ( $r = .36, p < 0.01$ ) (Baer et al., 2006). Additionally, Van Dam et al. (2011) found that self-compassion was positively correlated with mindfulness using the same scales as the current study ( $r = .43, p < .01$ ).

*1.13.3 Research question three. Is there a relationship between other-compassion and mindfulness?* Other-compassion will not be related to mindfulness. Pommier's (2010) analogue study found that other-compassion was not significantly correlated with mindfulness ( $r = -.12, ns$ ). However, as other-compassion has not been examined in a clinical population before, this hypothesis is tentative.

*1.13.4 Research question four. Do difficulties in emotion regulation predict a significant amount of the variation in emotional distress?* Difficulties in emotion regulation will predict a significant amount of the variation in emotional distress. This hypothesis is based on a meta-analysis examining adaptive and maladaptive emotion-regulation strategies across psychopathology (Aldao et al., 2010). As previously explored in this chapter this meta-analysis found that specific maladaptive strategies were related to emotion dysregulation and that specific adaptive strategies were related to successful emotion regulation.

*1.13.5 Research question five. Do mindfulness, self-compassion and other-compassion significantly predict emotional distress?* Mindfulness, self-compassion and other-compassion will significantly predict emotional distress. This hypothesis is based on the research paper which found that self-compassion and mindfulness significantly shared the variance of symptom severity among individuals with mixed anxiety and depression (Van Dam et al., 2011). Additionally, Pommier's (2010) study found that other-compassion was correlated with personal distress. Further, it is proposed that self-compassion will best predict emotional distress. This hypothesis is based on the research paper which found that self-compassion explained up to 10 times more variance than mindfulness in symptom severity and quality of life among individuals with mixed anxiety and depression (Van Dam et al., 2011). It is unclear whether other-compassion will be a unique predictor of emotional distress. However, Pommier's (2010) study found that other-compassion was correlated with personal distress indicating that it may also be an important predictor variable.

*1.13.6 Research question six. Do mindfulness, self-compassion and other-compassion significantly predict emotion dysregulation?* Mindfulness, self-compassion and other-compassion will significantly predict emotion dysregulation.

This hypothesis is based on Erisman et al's. (2005) poster presentation which found that mindfulness and self-compassion predicted emotion dysregulation. There are no studies exploring other-compassion with emotion dysregulation. Further, it is proposed that self-compassion will best predict emotion dysregulation. This hypothesis is based on the poster presentation previously reviewed which reported self-compassion (-.22) as a more robust predictor of emotion dysregulation than mindfulness (-.17) (Erisman et al., 2005).

*1.13.7 Research question seven. Does emotion dysregulation play a mediating role within the relationships between mindfulness, self-compassion, other-compassion and emotional distress?* It was hypothesised that emotion dysregulation would play a mediating role within the relationships between mindfulness, self-compassion, other-compassion and emotional distress. However, no previous research has tested this hypothesis.

## Chapter Two

### Method

#### *2.1 Chapter Overview*

Firstly, a description of the design that has been adopted for the current study is given. This is followed by the participant characteristics. The questionnaires that have been selected will be introduced and their psychometric properties outlined. There will then be a discussion of the ethical considerations of the study. This is followed by a description of the procedure. Lastly, the plan of statistical analyses will be discussed for each of the research questions.

#### *2.2 Design*

A quantitative, cross sectional, within-subjects design was employed. Data were collected from participants experiencing emotional distress to varying degrees within a primary care mental health setting. The design allowed for the relationship between the three predictor variables (mindfulness, self-compassion and other-compassion) and the outcome variable of emotional distress to be explored. The design also allowed for the exploration of the relationship between these three predictor variables and another dependent variable, emotional dysregulation. Additionally, emotion dysregulation was explored as a potential mediating variable between the relationships of the three predictor variables and emotional distress. Causal inferences cannot be made when using this analysis. Instead, an investigation of how a set of explanatory variables is associated with a dependent variable is of interest (Tranmer & Elliot, 2009). Five psychometric questionnaires (mindfulness,

self-compassion, other-compassion, emotion dysregulation, emotional distress) were used to address the study's research questions.

### *2.3 Participants*

In this section, the rationale behind the recruitment strategy for the current study is described. This includes an explanation of the inclusion and exclusion criteria and the recruitment process that was adopted. Tables outlining participant recruitment and characteristics are included.

*2.3.1 Sample size calculation.* Initially the GPower3 calculator was utilised. Effect sizes from previous data were entered in order to estimate the sample size required. However, GPower3 returned a very small sample size of 27 which is not robust enough to conduct multiple linear regression analysis. Thus a sample size rule of thumb was employed. Tabachnick & Fidell (2007) suggest that  $N$  should ideally be  $50 + 8$  (independent variables) for testing a full regression model. Therefore, as research questions three and four required four independent variables, a minimum of 82 participants needed to be recruited.

*2.3.2 Inclusion criteria.* Participants in the study all met the criteria for Steps 2 and 3 of the Stepped Care Model (IAPT, 2011). Therefore, participants were all of working age (17-65 years) and were experiencing mild-to-moderate psychological disorders. The purpose of recruiting from IAPT was to obtain a broad range of emotion dysregulation scores within a clinical population.

*2.3.3 Exclusion criteria.* Patients are excluded from IAPT if they meet a diagnosis of substance dependence or if they are at significant risk of harm to self or others, and hence these participants were not available to the study.

*2.3.4 Description of the participants.* Participants were recruited across the Norfolk and Cambridgeshire IAPT/Wellbeing services. They were recruited from the group programmes of stress control, self-esteem, long-term conditions and mindfulness. Returned questionnaire packs were coded with group type, date and location. Table 2.1 shows the amount and spread of participants recruited across groups. Table 2.2 shows the percentage of participants who came from different group types. In total, 303 questionnaire packs were handed out and 94 were returned. The response rate for returning completed questionnaire packs was 31%. In addition to the research questionnaires, participants were asked to supply their age, occupation status, gender and mental health diagnosis if known. A percentage of the demographic information is unknown as not all participants contributed to this information request. Table 2.3 shows these group characteristics.

Table 2.1

*Recruited Participants in 2012*

Group and Location in Date Order	Number of Participants
Recruited	
Stress control group, Norfolk, August	11
Stress control group, Norfolk, August	10
Stress control group, Norfolk, September	8
Mindfulness group, Cambridgeshire, September	5
Stress control group, Norfolk, September	9
Stress control group, Norfolk, October	12
Self-esteem group, Cambridgeshire, October	4
Stress control group, Norfolk, October	15

Long-term conditions group, Norfolk, November	4
Stress Control group, Norfolk, received through the post	16

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N = 94

Table 2.2  
*Percentage of Participants Attending Group Type*

Group Type	Percentage of
Participants	
Stress Control	86.2%
Mindfulness	5.3%
Self-Esteem	4.3%
Long-Term Conditions	4.3%

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N = 94

Table 2.3  
*Group Characteristics*

Gender		Age	
Unknown	13.8%	Average age	42 (sd = 12)
Females	52.1%	Age range	18 – 64
Males	34%		
Employment Status		Mental Health Diagnosis	
Employed	59.6%	Unknown	57.4%
Unemployed	18.1%	Anxiety	7.4%
Retired	7.4%	Depression	19.1%
Homemaker	3.2%	Mixed anxiety and depression	13.9%
Student	2.1%	Chronic fatigue syndrome	2.1%
Unknown	9.6%		

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N = 94, sd (standard deviation)

## 2.4 Questionnaires

All questionnaires included in the current study were self-report. In this section each measure will be described in turn. This will include the theoretical framework underlying the measure, the scale used, the psychometric properties of the selected measure and the rationale for its selection. Copies of the questionnaires are included in the questionnaire pack, Appendix 1.

*2.4.1 Mindful attention awareness scale (MAAS; Brown & Ryan, 2003).* The MAAS is a trait measure of one's tendency to attend to present-moment experiences in everyday activities and is the most commonly used mindfulness measure found in the literature. The scale assesses mindfulness of both internal states (e.g., "I could be experiencing some emotion and not be conscious of it until some-time later") and overt behaviour (e.g., "I break or spill things because of carelessness, not paying attention, or thinking of something else"). The MAAS is self-administered and consists of 15 items rated on a six-point Likert-type scale. One represents 'almost always' and six represents 'almost never'. It asks participants to rate the degree that they agree with statements pertaining to mindful or un-mindful behaviours and internal states. The scale provides a total score which can be used as an indicator of broad difficulties in attention and awareness, with higher scores indicating more mindfulness.

Brown and Ryan (2003) reported the following reliability and validity outcomes. The MAAS demonstrated good internal consistency with alpha coefficients computed in a student sample (Cronbach's  $\alpha = .82$ ) and a general adult sample (Cronbach's  $\alpha = .87$ ). The MAAS score had good test-retest reliability over a period of four weeks ( $r = .81, p < .0001$ ). Convergent and discriminant validity of the MAAS was confirmed by a pattern of correlations. For example, the MAAS was



inversely related to the Beck Depression Inventory and State-Trait Anxiety Inventory and positively related to pleasant hedonic tone and positive affectivity (Brown & Ryan, 2003). Furthermore, the scale converges moderately at best with questionnaires of psychological awareness indicating that it may be tapping a distinct construct. Validity was further demonstrated by findings that Zen practitioners score significantly  $t(98) = 2.45, p = .05$  (Cohen's  $d = .50$ ) ( $M = 4.29, SD = 0.66$ ) higher on the MAAS compared with a comparison group of community adults ( $M = 3.97, SD = 0.64$ ). Additionally the MAAS has been extensively used in studies utilising clinical populations, for example, generalised anxiety disorder (Roemer et. al., 2009), depression (Argus and Thompson, 2008) and stress (Shapiro, Biegel & Brown, 2007).

This measure was chosen for its good reliability and validity alongside its use across research and clinical practice. The Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) was considered as this was created from an analysis of all the mindfulness measuring instruments. However, this questionnaire has 39 questions and was considered too long to include in an already lengthy battery. Furthermore, the strength of the FFMQ is its five separate facets of mindfulness (observe, describe, awareness, non-judge, non-react) however the design of the current study was to use a mindfulness total score only.

*2.4.2 Self-compassion scale-short form (SCS-SF; Raes, Pommier, Neff & Van Gucht, 2011).* The SCS-SF consists of three dimensions that Neff (2003) identified as components of self-compassion and their opposites. The six subscales are: Self-Kindness (being kind and understanding toward oneself) and its opposite, Self-Judgment; common Humanity (viewing one's negative experiences as a normal part of the human condition) and its opposite, Isolation; mindful Acceptance (holding

painful thoughts and feelings in mindful awareness rather than over identifying with them) and its opposite, Over-Identification. These dimensions map directly onto the definition of self-compassion being used in this study.

Sample items include: Self-Kindness subscale (e.g., “I try to be understanding and patient towards those aspects of my personality I don’t like”), Self-Judgment subscale (e.g., “I’m disapproving and judgmental about my own flaws and inadequacies”), Common Humanity subscale (e.g., “I try to see my failings as part of the human condition”), Isolation subscale (e.g., “When I fail at something that’s important to me, I tend to feel alone in my failure”), Mindfulness subscale (e.g., “When something painful happens I try to take a balanced view of the situation”), and Over-Identification subscale (e.g., “When I’m feeling down I tend to obsess and fixate on everything that’s wrong”). The SCS-SF is self-administered and consists of 12-items rated on a five-point Likert-type scale. One represents ‘almost never’ and five represents ‘almost always’. The scale asks people to indicate how often they have behaved in a kind or compassionate manner. The scale provides a total score which can be used as an indicator of broad difficulties in self-compassion as well as scores for the individual subscales.

Raes, Pommier, Neff & Van Gucht (2011) reported the following validity outcomes. The scale has good internal consistency with alpha coefficients computed in a student sample from the United States (Cronbach's  $\alpha = .86$ ). The short form correlated highly with the long form Self-Compassion Scale (SCS; Neff, 2003b) ( $r \geq 0.97$  all samples). Internal consistency reliability coefficients (Cronbach's  $\alpha$ ) for the subscales were more variable: Self Kindness = 0.54, Self-Judgment = 0.63, Common Humanity = 0.62, Isolation = 0.68, Mindfulness = 0.69 and Over Identification = 0.75. Confirmatory factor analysis on the SCS-SF supported the same six-factor

structure as found in the long form, as well as a single higher-order factor of self-compassion.

The original SCS has 26 items and as mentioned is highly correlated with the SCS-SF. Neff (2003b) reported the following validity and reliability outcomes for the SCS. High convergent and discriminant validity were shown with overall self-compassion scores correlated negatively with self-criticism, depression, anxiety and rumination and positively with social connectedness and emotional intelligence. Discriminant validity was demonstrated by an absence of correlations with questionnaires of social desirability. Additionally, Buddhist practitioners were found to score significantly higher on the measure than a comparison group, indicating that the SCS has the ability to differentiate between groups in a theoretically consistent manner, suggesting that the scale is measuring what it intends to measure. Good test-retest reliability for the total score ( $r = 0.93$ ) was demonstrated over a three week interval. Test-retest reliability for the subscale scores were; kindness = 0.88, self-judgment = 0.88, common humanity = 0.80, isolation = 0.85, mindfulness = 0.85, and over-identification = 0.88.

Self-compassion was chosen as a predictor variable as previous research found it was a robust predictor of symptom severity (Van Dam et al., 2011). Thus self-compassion may also predict emotion dysregulation. The SCS-SF was chosen for its good total score reliability and validity alongside its popular use across research and clinical practice. The short-form was selected to reduce the load to participants completing the research pack.

*2.4.3 Compassion scale (CS; Pommier, 2010).* The CS is a 24-item self-report measure based on the definition of compassion adopted from Neff's (2003) model of self-compassion. The CS follows the same construction as the SCS on the

three dimensions of Kindness, Common Humanity, and Mindfulness. There are eight Kindness items (e.g., “If I see someone going through a difficult time, I try to be caring toward that person”), eight Common Humanity items (e.g., “Everyone feels down sometimes, it is part of being human”), and eight Mindfulness items (e.g., “I pay careful attention when other people talk to me”). While these three dimensions from the SCS were retained their opposing constructs were conceptualised differently. In the CS the opposing construct for Kindness is Indifference, opposing Common Humanity is Separation and opposing Mindfulness is Disengagement. Participants indicate how they typically act towards others using a five-point scale. One is ‘almost never’ while five is ‘almost always’. The scale provides a total score along with three sub-scale scores with higher scores indicating greater levels of compassion towards others.

This measure has been recently developed and appears in Pommier’s (2010) validation dissertation plus Neff and Germer’s (2012) research paper. Pommier’s (2010) validation study of the CS demonstrated good internal consistency (Cronbach's  $\alpha = 0.90$ ) when validated using a student population. Internal consistency reliability coefficients (Cronbach’s  $\alpha$ ) for the subscales were: Kindness = 0.77, Indifference = 0.68, Common Humanity = 0.70, Separation = 0.64, Mindfulness = 0.67, and Disengagement = 0.57.

Questionnaires of compassionate love ( $r = 0.27 - 0.54, p < .01$ ), social connectedness ( $r = 0.41, p < .01$ ), wisdom ( $r = 0.26 - 0.56, p < .01$ ) and empathy ( $r = 0.35 - 0.65, p < .01$ ) were all significantly correlated with the CS. This provides support for convergent validity. However, correlations with these constructs were not so high as to suggest that they were measuring the same construct as the CS. Therefore this provides some initial support for discriminant validity. Additionally,

the CS was significantly negatively correlated with the personal distress subscale ( $r = -.15, p < .01$ ) of the Interpersonal Reactivity Index (IRI; Davis, 1980) providing further discriminant validity.

The CS is the only scale available which attempts to measure the construct of compassion towards others. It has good reported reliability and validity and maps onto Neff's (2003) model of self-compassion which was used in this study.

*2.4.4 Difficulties in emotion regulation scale (DERS; Gratz & Roemer, 2004).* The DERS is a 36-item self-report questionnaire designed to assess six areas of emotional dysregulation which map directly onto the definition of emotion regulation being used in this study. The six subscale areas include: Lack of awareness of emotions (e.g., "I pay attention to how I feel"), acceptance of emotional responses (e.g., "When I'm upset, I become embarrassed for feeling that way"), emotional clarity (e.g., "I am confused about how I feel"), ability to engage in goal-directed behaviours (e.g., "When I'm upset, I have difficulty getting things done"), impulse control (e.g., "When I'm upset, I feel out of control"), and access to emotion regulation strategies (e.g., "When I'm upset, I believe that there is nothing I can do to make myself feel better"). The scale provides a total score which can be used as an indicator of broad difficulties in emotion regulation. Participants indicate how often each item applies to themselves on a five-point Likert scale. One represents 'almost always' and five represents 'almost never'.

In the Gratz and Roemer (2004) validation study, the DERS demonstrated excellent internal consistency (Cronbach's  $\alpha = .93$ ) when validated using a student population. Internal consistency reliability coefficients (Cronbach's  $\alpha$ ) for the subscales were: Acceptance = 0.90, Goals = 0.87, Impulse control = 0.87, Awareness = 0.76, Strategies = 0.87, and Clarity = 0.81. The DERS demonstrated adequate

construct validity with established experiential avoidance and emotional expressivity scales. The DERS was correlated with behavioural outcomes (frequency of deliberate self-harm and frequency of intimate partner abuse) indicating predictive validity. The DERS score had good test–retest reliability over a period ranging from 4 to 8 weeks ( $\rho .88, p < .01$ ). Additionally, the DERS was significantly negatively correlated with an experimental measure of emotion regulation within a clinical population (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006).

Other questionnaires were considered for use in the current study. An alternative method of measuring emotional dysregulation would have been to deliver questionnaires based on individual components of emotion dysregulation such as a measure of rumination, a measure of suppression and a measure of experiential avoidance. However, this would have considerably increased the length of the questionnaire battery perhaps making it untenable for people suffering with mental health difficulties to complete. The DERS was chosen as it is well validated and reliable and represents a broad range of processes thought to be involved in emotional dysregulation. These include awareness and understanding of emotion as well as strategies employed to regulate emotion. The six subscales map directly onto the definition of emotion dysregulation being used in this study. Emotion dysregulation was chosen as a potentially important predictor variable as it is a transdiagnostic feature observed across disorders, which if treated may improve people's mental health (e.g., Cameron, Booth, Schlatter, Ziginskis, & Harman, 2007; Gratz & Gunderson, 2006; Kirby & Baucom, 2007).

*2.4.5 Depression, anxiety, and stress scale (DASS-21; Lovibond & Lovibond, 1995).* Although IAPT routinely collects data using depression and anxiety scales

these were not used to ensure anonymised data would be collected. Furthermore, it was planned that the DASS-21 total score would be used in the current study as a measure of overall emotional distress. The DASS-21 is a self-report measure of depressive, anxious arousal, and tension/stress symptoms, designed to distinguish between these symptom clusters. There are seven items each on the Depression scale (e.g., “I couldn’t seem to experience any positive emotion at all”), Anxiety scale (e.g., “I felt that I was using a lot of nervous energy”), and the Stress scale (e.g., “I found it hard to wind down”). Participants indicate the extent to which they have experienced each state over the past week using a four-point Likert scale. Zero represents ‘did not apply to me at all’ and three represents ‘applied to me very much, or most of the time’. The scale provides a total score along with three sub-scale scores.

Henry and Crawford (2005) report good validity and reliability. Internal consistency (Cronbach's  $\alpha = .93$ ) was excellent when validated using a general adult UK population. Internal consistency reliability coefficients (Cronbach's  $\alpha$ ) for the subscales were: Depression = 0.88, Anxiety = 0.90 and Stress = 0.93. The three DASS-21 sub-scales index a substantial common factor (i.e. general psychological distress) but they also contain variance that is specific to each scale.

Antony, Bieling, Enns and Swinson (1998) assessed the reliability and validity of the DASS-21. They compared the sub-scale scores and total scores of patients with major depressive disorder, panic disorder and non-clinical participants. Patients in the major depressive disorder condition tended to score highest on the Depression ( $M = 29.96$ ,  $SD = 9.18$ ) and Stress subscales ( $M = 24.30$ ,  $SD = 9.84$ ) compared with the Anxiety subscale ( $M = 14.04$ ,  $SD = 9.78$ ), whereas individuals in the panic disorder group scored highest on the Anxiety subscale ( $M = 18.72$ ,  $SD =$

10.77) compared with the Depression subscale ( $M= 12.75$ ,  $SD = 10.15$ ). Individuals in the nonclinical volunteers group scored lower on all three subscales than individuals in all of the clinical groups.

Individual measures of anxiety, depression and stress were considered for the current study. However, by including separate measures for each of these items, a total emotional distress score could not be captured. Thus the DASS-21 was chosen as it is well validated and reliable. It includes separate subscales for depression, anxiety and stress as well as an overall total score measuring global symptoms or emotional distress.

## *2.5 Ethical Considerations*

This section includes a description of the ethical approval process for the current study. This is followed by a section on how confidentiality was protected, issues around consent and the precautions taken around the possibility of experiencing distress by the participants who took part in the study.

*2.5.1 Ethical approval.* Ethical approval was sought and obtained from the NHS Health Research Authority in June 2012 (see Appendix 2 for approval letter). This was followed by Cambridgeshire and Peterborough and Norfolk and Suffolk NHS Foundation Trust Research and Development approval.

*2.5.2 Confidentiality.* Confidentiality was ensured in compliance with the Data Protection Act (1988). Each participant's responses and demographic information were linked to a unique identification number to protect anonymity. Participants who chose to enter the prize-draw provided an email address or phone number on a separate sheet of paper which was not linked to their responses or



demographic information. This data was destroyed after the prize was drawn. Raw data were stored securely in a locked filing cabinet at the researcher's home address. Once the thesis has been completed raw data will be moved and stored at the University of East Anglia in a locked filing cabinet. Data will be stored at this location for five years and will then be destroyed. Electronic data were held on a password-protected secure database and on the researcher's encrypted memory stick in line with the Data Protection Act (1988).

*2.5.3 Consent.* Information regarding the research aims were provided prior to any participant's involvement in the study. Participants were informed that participation in the research was voluntary and that by returning a completed questionnaire pack they were consenting to take part in the study. Therefore consent was implicit consent. Participants were asked to keep a copy of their unique identification number. The participant information sheet (Appendix 1) explained that if a participant wished to withdraw from the research study they could contact the researcher and use their unique identification number to identify their data. Their questionnaire data would then be removed from the analysis and their questionnaires destroyed. Participants were advised they would be able to withdraw their data up until the point of data analysis. No participants requested that their data were withdrawn following completion of the questionnaires.

*2.5.4 Potential for distress.* Due to the nature of the questionnaires included in the study it was deemed possible that they may elicit an emotional response for participants. For example, completing the DERS involves reflecting about how one thinks, feels and acts when upset. Thinking about being upset may have a negative effect on mood. While there is no evidence suggesting a long-term effect of these questions, precautionary measures were planned given that participants may be

currently experiencing mild to moderate distress levels indicated by their referral to IAPT. Prior to completing the questionnaires participants were given detailed information about the questionnaires in the participant information sheet (Appendix 1) and informed that if they felt distressed that they should not continue completing the self-report questions. Should distress occur, the information sheet signposted participants to appropriate sources of support such as contacting their IAPT therapist or GP. The contact details for the Samaritans and the Patient Advice and Liaison Service were also included. Additionally, participants were given full contact details for the primary researcher and their supervisor as well as information about how to raise a formal complaint should they have concerns.

## *2.6 Procedure*

This section outlines the procedure adopted for approaching participants and data collection.

*2.6.1 Approaching participants.* Consent to approach participants was requested from the Cambridgeshire and Norfolk IAPT lead clinicians. Consent was given for the researcher to attend groups where between 10 and 60 participants could be approached at one time.

*2.6.2 Data collection.* Patients attending IAPT groups were invited to take part in the research project. The researcher attended the end of session two. The researcher did not attend session one of groups in order to allow group members the chance to settle into their groups, conduct introductions and be informed of my visit the next week. At the end of session two the researcher verbally explained the aims,

purpose and nature of the research project and handed out questionnaire packs (please see appendix 1). The questionnaire pack contained an invitation to take part in the study, information sheet, demographic questions (age, gender, employment status and diagnosis if known), followed by the five questionnaires. Patients were verbally invited to take part in the study by completing the questionnaires at home and returning the completed questionnaire pack to the researcher at the next group session. Patients were verbally informed that participation in the study was entirely voluntary, that their answers were anonymous, and that consent would be implied if they returned a completed questionnaire pack. This procedure meant that patients had time to read the information sheet and decide whether they wanted to take part over the week ahead. Questionnaires in the questionnaire packs were counterbalanced to avoid fatigue effects and each pack was assigned a unique identification number which participants were encouraged to keep hold of. The researcher attended the next group session and collected any completed questionnaire packs. At this stage participants were offered the opportunity to enter a prize-draw to win one of two £40 Marks and Spencers vouchers. Participants who chose to opt into the prize-draw were required to provide an email address. To protect anonymity this email address was not linked to the participants questionnaire pack. Participants were also invited to opt into being emailed a summary of the results of the study. The winners of the prize-draw were contacted through the provided email address. Additionally, participants who requested the study summary were contacted through the provided email address. Participants who had forgotten to return their questionnaire packs but who still wanted to take part in the study were encouraged to bring them to the group facilitator the following week. These

completed packs were then posted by the facilitator to the researcher at the university address.

## *2.7 Preparation of Analysis*

This section describes the intended process of data checking and cleaning. This is followed by the data analysis that was planned for each of the research questions.

*2.7.1 Cleaning and checking data.* It was planned that all analyses would be conducted using the Statistical Packages for Social Sciences SPSS for Windows (version 18.0, 2009). Prior to analysis, the data would be cleaned and checked for any data input errors. Returned questionnaire packs with multiple unanswered questions would be considered incomplete and withdrawn from the study. This is considered an appropriate option if the number of missing values violates the robustness of the questionnaire (Field, 2009). Missing data values which did not violate the robustness of the questionnaires would be labelled as missing in the database. Assumptions for multiple linear regression would be checked using scatter plots of residuals (P-P plots). Standardised residuals would be checked against standardised predicted scores. If the assumption was met the pattern of residuals would have around the same spread on either side of the horizontal line drawn through the average residual (Field, 2009). If assumptions were violated transformation of the data would be considered.

## 2.8 Research Questions and Planned Analyses

*2.8.1 Research question one. Is there a relationship between self-compassion and other-compassion?* A Pearson's correlation will be used to determine whether there is a relationship between self-compassion and other-compassion.

*2.8.2 Research question two. Is there a relationship between self-compassion and mindfulness?* A Pearson's correlation would be used to determine whether there is a relationship between self-compassion and mindfulness.

*2.8.3 Research question three. Is there a relationship between other-compassion and mindfulness?* A Pearson's correlation would be used to determine whether there is a relationship between other-compassion and mindfulness.

*2.8.4 Research question four. Do difficulties in emotion regulation predict a significant amount of the variation in emotional distress?* A simple regression analysis was planned, with the measure of depression, anxiety and stress (emotional distress) as the dependent variable and the measure of difficulties with emotion regulation as the independent variable.

*2.8.5 Research question five. Do mindfulness, self-compassion and other-compassion significantly predict emotional distress?* It was planned that regression analysis would be used to investigate whether mindfulness, self-compassion and other-compassion predict emotional distress as measured by the DASS-21. Regression was planned as predictor variables can be entered separately in-line with current research. For example, the self-compassion and mindfulness questionnaires would be entered first as these constructs have previously been shown to be predictor variables of depression and anxiety (Van Dam et al., 2011). The other-compassion

measure would be entered separately as it has not yet been tested in research as a predictor variable for anxiety, depression and stress. Beta values would also be checked to see which predictor variable best predicts emotional distress.

*2.8.6 Research question six. Do mindfulness, self-compassion and other-compassion significantly predict emotion dysregulation?* Planned analysis was identical to the plan for research question five. Multiple linear regression analysis would be used to investigate whether mindfulness, self-compassion and other-compassion predict emotion dysregulation as measured by the DERS. Regression was planned as predictor variables can be entered separately in-line with the current research outlined above. Beta values would also be checked to see which predictor variable best predicts emotion dysregulation.

*2.8.7 Research question seven. Does emotion dysregulation play a mediating role within the relationships between mindfulness, self-compassion, other-compassion and emotional distress?* It was planned to conduct a multiple regression analysis with the possible mediator of emotion dysregulation entered into the first block. Multiple linear regression models allow for exploration of mediation and can address whether a particular construct accounts for change (Kazdin, 2007). The four tests for demonstrating mediation statistically as outlined by Kazdin (2007) would then be applied.

## Chapter Three

### Results

#### *3.1 Chapter Overview*

This chapter is divided into three sections; firstly, an initial examination of the data is presented, which describes the procedures used for screening, checking assumptions and transforming the data; secondly, an account of the demographic variables for participants and the descriptive statistics for the measures; thirdly, a reporting of the findings in context of the research hypotheses and lastly, the findings are summarised.

#### *3.2 Exploration of the Data*

The data were screened in accordance with the recommendations outlined by Tabachnick and Fidell (1996) and Field (2009). Investigations into the assumptions for using multiple linear regression were conducted in accordance with the recommendations of Field (2009). The data were screened using both visual inspection (histogram, box plots) and statistical methods (testing of skewness and kurtosis) to ensure that the data set was complete, clear for errors, clear for outliers and normally distributed.

*3.2.1 Data screening.* The data were checked for accuracy by the researcher. Additionally, an independent third party checked a random 20% of the data entered into the spreadsheet. Data values were missing for 20 of a total of 94 participants who had omitted between 1 – 3 items across the five questionnaires. It is likely that these participants inadvertently missed these questions as they occurred at random.

In total 27 data values were missing. This indicates that most participants missed maximum one item in a questionnaire. Missing data values were labelled as missing in the database. It was hypothesised that the missing values could be attributed to the method of data collection; that is, participants completed the questionnaire packs in their own time.

Boxplots were produced to screen for any outliers or extreme values. One outlier in the DERS, one outlier in the MAAS and two outliers in the SCS were identified (see Appendix 3). Data were double checked for accuracy. Outliers were identified and adjusted in accordance with Field (2009) (2 times standard deviation plus the mean).

*3.2.2 Examination of the distribution of the variables.* The distribution of the data were assessed visually using histograms superimposed with the normal curve and normal quantile-quantile (Q-Q) plots. Additionally the data were assessed statistically by looking at kurtosis and skewness values. These values can be found in Appendix 4. Copies of the histograms for each of the measures are included in Appendix 5. The data set showed sufficiently normal distributions for the measures of depression, anxiety and stress, difficulties in emotion regulation, other-compassion and mindfulness. The measure of self-compassion showed a positive skew within the data. This would suggest that the majority of participants were scoring within the lower range of self-compassion scores, rather than around the median as would be expected in a normal distribution. To address this, the data were successfully transformed using log transformation, in line with recommendations from Field (2009). Following this transformation, the measure of self-compassion was found to have acceptable levels of skewness and kurtosis with no extreme values



or outliers (Field, 2009). As a result the transformed scores for the measure of self-compassion were used in all analyses.

### *3.3 Assumptions for Regression Analyses*

The recommendations in Field (2009) were used to assess the assumptions for all linear regression analyses reported in this chapter. Variance Inflation Factors (VIF) and tolerance values were checked to assess the assumption of no multicollinearity. The Durbin-Watson test was used to assess for autocorrelation (meaning that there were independent errors). This test was used to ensure that for any two observations the residual terms were uncorrelated. Further analyses were used to identify whether any cases were having an undue influence on findings. Plots of the standardised residuals against standardised predicted values were produced to check for heteroscedasticity in the data and assess whether the data had broken the assumptions of linearity (Please see Appendix 6 and 7 for these plots). Histograms and normal probability plots were used to test the normality of residuals.

The Durban-Watson statistics were all found to be between 1 and 3 indicating that the residual terms were independent (Field, 2009). In all cases the tolerance values for the predictor variables were found to be more than 0.2 and the VIF values were found to be less than 10, indicating an absence of high levels of collinearity between predictor variables (Myers, 1990; Menard, 1995; as cited in Field, 2009).

Individual cases were checked for their influence on the model. For all tests there were an acceptable number of cases with standardised residuals of more than  $\pm 2.5$ . For each regression analysis, the cases with standardised residuals of more than

$\pm 2.5$  were checked. No cases were found to have a Cook's distance greater than 1, suggesting that none of the cases were having an undue influence on the model. The average leverage was calculated (0.04) and all cases were within the boundary of 3 times the average, which was deemed acceptable (Stevens, 1992; as cited in Field, 2009). The Mahalanobis distance values were also checked. In all instances there were no cases with standardised residuals that exceeded the recommended cut-off. These checks were taken to indicate that no individual cases were having an undue influence on any of the reported findings.

Lastly, in all instances the plots of standardised residuals against standardised predicted values indicated that there was not heteroscedasticity in the data and that the data had not broken the assumptions of linearity. The histograms and normal probability plots all indicated that the residuals were normally distributed.

In summary, for all regression analyses reported in this chapter it was ensured that the model was not unduly influenced by any individual cases. Additionally, all assumptions were checked and found not to be violated.

### *3.4 Demographic Information and Descriptive Data for the Questionnaire Scales*

Demographic information collected from participants is outlined, as well as an exploration into the population sample. Internal reliability of the measures were calculated and compared with those published in recent research papers.

*3.4.1 Demographic information.* A total of 94 adults, across 10 mental health groups within Norfolk and Cambridgeshire participated in the study. Of these, 34% were male, 52.2% were female, 13.8% of participants did not indicate their gender

on the demographic information sheet. The mean age for the group was 42 (sd12) and the age range was 18-64. The descriptive data for the scales are presented in Table 3.1. The DASS has a particularly large standard deviation indicating that the data points are spread out over a large range of values, rather than lying close to the mean.

Table 3.1

*Descriptive Data for the Scales and Subscales*

Measure	Mean	Std
Deviation	(n = 94)	
DERS	121.61	20.76
DERS Strategies	27.36	0.71
DERS Clarity	16.20	0.50
DERS Aware	17.33	0.56
DERS Impulse	18.43	0.57
DERS Non Accept	21.95	0.60
DERS Goals	19.86	0.39
SCS Total	13.63	0.31
MAAS	3.16	0.96
DASS Total	69.43	26.29
DASS Depression	24.66	11.14
DASS Anxiety	17.77	11.09
DASS Stress	27.00	9.06
CS Total	23.04	3.55
CS Disengagement	3.84	0.90

CS Mindfulness	3.72	0.08
CS Separation	3.89	0.09
CS Common Humanity	3.59	0.09
CS Kindness	4.18	0.08

*3.4.2 Descriptive data of group type.* The descriptive data are further presented in terms of each type of group they were collected from (Table 3.2).

Table 3.2

*Descriptive Data for Each Group Type*

Measure	Stress Control (n = 81)	Mindfulness (n = 5)	Self-Esteem (n = 4)	Long-Term Conditions (n = 4)
<b>DASS</b>				
M (SD)	70.12 (3.00)	59.20 (5.08)	74.00 (13.56)	63.50 (13.28)
<b>DERs</b>				
M (SD)	121.27 (2.19)	123.80 (13.01)	144.75 (5.57)	102.50 (11.63)
<b>MAAS</b>				
M (SD)	3.17 (0.11)	3.07 (0.46)	2.73 (0.40)	3.43 (0.44)
<b>SCS</b>				
M (SD)	13.67 (0.31)	16.30 (1.10)	8.88 (0.85)	14.25 (2.09)
<b>CS</b>				
M (SD)	22.68 (0.38)	25.30 (1.65)	24.81 (1.77)	25.69 (1.86)

The stress control group versus all other group types were considered as potentially unique population samples. The stress control groups are offered to all patients who self-refer or who are referred to IAPT by a General Practitioner as a

first port of call. This means they would not have had previous individual psychological therapy from an IAPT practitioner. Each other group collected from had more stringent participation criteria such as needing to have a long-term health condition or low self-esteem. These group members comprised of a mixture of patients some of whom would have had previous individual psychological therapy within IAPT and some of whom would not have. The descriptive statistics and differences between means are reported in Table 3.3 and Table 3.4. These analyses found that there was a significant difference between the stress control group sample and the sample containing all other groups on the other-compassion measure. Due to this, linear regression analyses included group membership as a predictor variable in order to check for any statistically significant differences. This comparison was only completed if the research question included the other-compassion measure. No comparison analysis will be made in research questions requiring correlation as two correlations would need to be conducted, one for the stress control group ( $n = 81$ ) and one for all other groups ( $n = 13$ ). The general rule of thumb is no less than 50 participants are required for a correlation (Wilson Van Voorhis & Morgan, 2007), therefore a correlation conducted for all other groups would be underpowered.

Table 3.3

*Descriptive Statistics between Stress Control and Other Groups Combined*

	Stress Control ( $n = 81$ )	Combined Other Groups ( $n = 13$ )
DASS M (SD)	70.12 ( 27.07)	65.08 ( 21.10)
DERS M (SD)	121.27 (19.71)	123.69 (27.31)
MAAS M (SD)	3.17 (0.11)	3.08 (0.89)
CS M (SD)	22.68 (3.46)	25.27 (3.36)
SCS M (SD)	1.13 ( 0.09)	1.11 (0.14)

Table 3.4

<i>Differences between Stress Control Group and Other Groups Combined</i>		
Measure	<i>t</i> Statistic	Significance 2 tailed
DASS Total	0.64	0.52 <i>ns</i>
DERS Total	-0.39	0.70 <i>ns</i>
SCS Total	0.72	0.47 <i>ns</i>
CS Total	-2.56	0.02*
MAAS	0.32	0.75 <i>ns</i>

N = 94, df = 92, \*  $p < 0.05$ , *ns* nonsignificant

*3.4.3 Internal reliability of the measures.* To examine the internal consistency of the five questionnaires used within the current study, Cronbach's alpha coefficients were calculated. These are reported in Table 3.5. According to Field (2009), Cronbach's alpha coefficients ( $\alpha$ ) should not measure below .7 to signify reliability of a scale. Each of the total scores and subscales exhibited Cronbach's alpha scores higher than this, suggesting all have good internal consistency.

The Cronbach's alpha score found in the current study for the full scale DASS-21 measure ( $\alpha = .72$ ) is not as robust as the figure reported ( $\alpha = .93$ ) in previous research carried out by Henry and Crawford (2005). For the full scale DERS, the internal consistency reported in this study ( $\alpha = .71$ ) is not as robust as the figure reported ( $\alpha = .93$ ) in previous research carried out by Gratz and Roemer (2004).

In their research, Brown and Ryan (2003) reported a Cronbach's alpha score of  $\alpha = .82$  for the MAAS. This is comparable to the figure reported in the current

study ( $\alpha = .77$ ). For the full scale SCS-SF, the internal consistency reported in this study ( $\alpha = .77$ ) was comparable to the figure reported ( $\alpha = .86$ ) in previous research carried out by Raes, Pommier, Neff & Van Gucht (2011). In her research, Pommier (2010) reported a Cronbach's alpha score of  $\alpha = 0.90$  for the full scale CS. This is more robust than the alpha coefficient found in the current study ( $\alpha = 0.77$ ).

Although the current study found each subscale to be significantly reliable, the Cronbach's alpha coefficients were not as robust as those reported in the measure's validation studies. No clinical samples were used in the validation studies reported, rather student or general populations were used. This may account for the decrease in Cronbach's alpha coefficients reported in the current study which utilised a clinical population.

Table 3.5

*Cronbach's Alpha Coefficients for each of the Measures.*

Measure	Cronbach's Alpha Coefficient
DASS Total Score	.72
DERS Total Score	.71
SCS Total Score	.77
CS Total Score	.77
MAAS Total Score	.77

### *3.5 Findings in Relation to the Research Questions*

*3.5.1 Research question one. Is there a relationship between self-compassion and other-compassion?* To answer this question a Pearson's correlation was performed.

It was hypothesised that there would be no relationship between self-compassion and other-compassion. This test produced a non-significant correlation ( $r = .00$ ,  $p = 0.98$  ns). This indicates that there is no relationship between self-compassion and other-compassion scores within the sampled population.

*3.5.2 Research question two. Is there a relationship between self-compassion and mindfulness?* To answer this question a Pearson's correlation was performed. It was hypothesised that self-compassion would be positively correlated with mindfulness. This produced a significant correlation ( $r = .37$ ,  $p < .001$ ). According to Cohen (1988; as cited in Pallant, 2010), this is considered to be a medium effect size. This means, those with higher levels of self-compassion also tend to have higher levels of mindfulness.

*3.5.3 Research question three. Is there a relationship between other-compassion and mindfulness?* It was hypothesised that other-compassion would not be related to mindfulness. However, this test produced a significant correlation ( $r = .33$ ,  $p < .001$ ). According to Cohen (1988; as cited in Pallant, 2010), this is considered to be a medium effect size. This means, those with higher levels of other-compassion also tend to have higher levels of mindfulness

*3.5.4 Research question four. Do difficulties in emotion regulation predict a significant amount of the variation in emotional distress?* A simple regression analysis was performed, with the measure of depression, anxiety and stress (emotional distress) as the dependent variable and the measure of difficulties with emotion regulation as the independent variable.

It was hypothesised that difficulties in emotion regulation would be positively correlated with emotional distress. This produced a significant correlation ( $r = .61$ ,  $p$



< .001). According to Cohen (1988; as cited in Pallant, 2010), this is considered to be a large effect size. This means, as difficulties regulating emotions increases so does emotional distress or specifically depression, anxiety and stress. This is in accordance with the proposed hypothesis.

It was hypothesised that the independent variable would significantly account for the variance in the measure of emotional distress. This produced a significant regression model ( $F(1, 93) = 54.20$ ;  $p < .001$ ) with the independent variable accounting for 37.1% of the variance within the dependent variable ( $R^2 = .37$ ). The results of the regression analysis can be seen in Table 3.6.

The results of the regression analysis indicated that the measure of difficulties in emotion regulation predicted a significant amount of the variance within the measure of emotional distress. These findings support the hypotheses within research question one.

Table 3.6

*Summary of the Simple Linear Regression Analysis for Difficulties in Emotion*

*Regulation Predicting Emotional Distress (N = 94)*

Variable	Unstandardised coefficients		Standardised coefficients	<i>t</i>	Sig.	Correlation	
	B	Std error	Beta			<i>r</i>	Sig.
DERS	.77	.11	.61	7.36	.000*	.61	.000**

DERS = Difficulties in Emotion Regulation Scale, \*  $p < 0.001$ , \*\*  $p < 0.001$  (2 tailed)

These analyses could indicate that for the variable measured, difficulties regulating emotions may contribute to symptoms of anxiety, depression and stress.

The results of this model indicate that part of the predictive power held by emotion dysregulation is still shared with other variables. This means that having difficulties regulating emotions is not enough alone to entirely account for the level of emotional distress found in the total IAPT sample.

Potential group differences between participants enrolled in stress control groups and all other groups were not explored as the other-compassion measure was not used in this regression.

*3.5.5 Research question five. Do mindfulness, self-compassion and other-compassion significantly predict emotional distress?* To answer this question a multiple regression analysis was performed, with the measure of depression, anxiety and stress (emotional distress) as the dependent variable and the measures of mindfulness, self-compassion and other-compassion as independent variables. The independent variables were entered separately in-line with current research. The self-compassion and mindfulness measure were entered first as these constructs have previously been shown to be predictor variables of depression and anxiety (Van Dam et. al., 2011). The other-compassion measure was entered separately as it has not yet been tested in research as a predictor variable for anxiety, depression and stress. It was hypothesised that all three of the independent variables would significantly account for the variance in the measure of emotional distress. This produced a significant regression model ( $F(3, 93) = 20.94; p < .001$ ) with the independent variables accounting for 41.1% of the variance within the dependent variable ( $R^2 = .41$ ). Self-compassion and mindfulness accounted for 37% of the variance within the dependent variable. Including other-compassion added a further 4.1% share of the variance. The results of the regression analysis can be seen in Table 3.7.

The results of the regression analysis indicated that the measures of self-compassion, mindfulness and other-compassion each predicted a significant amount of the variance within the measure of emotional distress. These findings support the hypothesis of research question five.

Table 3.7

*Summary of the Multiple Linear Regression Analysis for Variables Predicting Emotional Distress (N = 94)*

Variable	Unstandardised coefficients		Standardised coefficients	t	p	Correlation		
	B	Std error				Zero-order	Partial	Part
Self-compassion	-77.16	23.54	-.29	-3.28	.001***	-.43	-.33	-.27
Mindfulness	-10.46	2.55	-.38	-4.11	.000***	-.56	-.40	-.33
Compassion	-1.60	.64	-.22	-2.49	.015**	-.34	-.25	-.20

\*\*\* p<0.001

\*\* p< .05

Table 3.7 shows that the measure of mindfulness recorded a higher beta value (beta = -.38,  $p < .001$ ) than the self-compassion measure (beta = -.29,  $p < .001$ ) and the other-compassion measure (beta = -.22,  $p < .05$ ). This indicates that mindfulness represents the most unique contribution to emotional distress. It also has the largest part correlation which would imply that this unique predictive power holds true even when the influence of the other independent variables are controlled for.

These analyses could indicate that for the variables measured, a lack of mindfulness, self-compassion and other-compassion may contribute to symptoms of anxiety, depression and stress. The significant share of the variance by self-

compassion and other-compassion suggests that part of the predictive power held by mindfulness is still shared with other variables. This means that having low levels of mindfulness is not enough alone to entirely account for the level of emotional distress found in the total IAPT sample.

Potential group differences between participants enrolled in stress control groups and all other groups were explored. As recommended by Field (2009) dummy variables (0 = stress control participants, 1 = all other participants) were entered into the regression model as a predictor variable. There was no effect whether a participant was enrolled in a stress control group or all other groups ( $t = -.596, p = 0.55$  ns).

*3.5.6 Research question six. Do mindfulness, self-compassion and other-compassion significantly predict emotion dysregulation?* To answer this question a multiple regression analysis was performed, with the measure of emotion dysregulation as the dependent variable and the measures of mindfulness, self-compassion and other-compassion as independent variables. Again, the independent variables were entered separately in-line with the current research by Van Dam et al. (2011) outlined in research question five. It was hypothesised that all three of the independent variables would significantly account for the variance in the measure of emotion dysregulation. This produced a significant regression model ( $F(3, 93) = 26.06; p < .001$ ) with the independent variables accounting for 46.5% of the variance within the dependent variable ( $R^2 = .47$ ). Self-compassion and mindfulness accounted for 45.8% of the variance within the dependent variable. Including compassion added a further 0.7% share of the variance. The results of the regression analysis can be seen in Table 3.8.

Table 3.8

*Summary of the Multiple Linear Regression Analysis for Variables Predicting Emotion Dysregulation (N = 94)*

Variable	Unstandardised coefficients		Standardised coefficients		t	Sig.	Correlation		
	B	Std error	Beta				Zero-order	Partial	Part
Self-compassion	-90.28	17.73	-.43	-5.09	.000***		-.56	-.47	-.39
Mindfulness	-7.97	1.91	-.37	-4.16	.000***		-.56	-.40	-.32
Compassion	-0.52	.48	-.09	-1.09	.28 <i>ns</i>		-.21	-.11	-.08

\*\*\* p<0.001

*ns* non-significant

Table 3.8 shows that the measure of self-compassion recorded a higher beta value (beta = -.43,  $p < .001$ ) than the mindfulness measure (beta = -.37,  $p < .001$ ). The other-compassion variable recorded a nonsignificant beta value (beta = -.09,  $p > 0.05$ ). This indicates that self-compassion represents the most unique contribution to emotion dysregulation. It also has the largest part correlation which would imply that this unique predictive power holds true even when the influence of the other independent variables are controlled for. This finding does not fully support the hypothesis of research question six. This is because only two variables (self-compassion and mindfulness) have been shown to make a significant contribution to emotion dysregulation. A trend was observed between other-compassion and emotion dysregulation as they were significantly negatively correlated ( $p = .02$ ). However, when other-compassion is entered into the model alongside self-compassion and mindfulness it loses its significance.

These analyses could indicate that for the variables measured, a lack of self-compassion and mindful awareness may contribute to emotion dysregulation. The significant share of the variance by mindfulness suggests that part of the predictive power held by self-compassion is still shared with other variables. This means that having low levels of self-compassion is not enough alone to entirely account for the level of emotion dysregulation found in the total IAPT sample.

Potential group differences between participants enrolled in stress control groups and all other groups were explored. As recommended by Field (2009) dummy variables (0 = stress control participants, 1 = all other participants) were entered into the regression model as a predictor variable. There was no effect whether a participant was enrolled in a stress control group or all other groups ( $t = -.255, p = 0.80$  ns).

*3.5.7 Research question seven. Does emotion dysregulation play a mediating role within the relationships between mindfulness, self-compassion, other-compassion and emotional distress?* To answer this question a multiple regression analysis was performed with the possible mediator of emotion dysregulation entered into the first block. Multiple linear regression models allow for exploration of mediation and can address whether a particular construct accounts for change (Kazdin, 2007). In demonstrating mediation statistically Kazdin (2007) suggests four conditions need to be satisfied. Firstly, the treatment or intervention (A: Self-compassion, mindfulness, other-compassion) must be related to therapeutic change (C: Emotional distress). This was demonstrated in the current study's research question five. The total effect of self-compassion and mindfulness on emotional distress can be seen in Figure 1a.

Secondly, self-compassion, mindfulness and other-compassion (A) must be related to the proposed mediator (B: Emotion dysregulation). Only self-compassion and mindfulness demonstrated this in the current study's research question six. Therefore, only the beta paths between self-compassion, mindfulness and emotion dysregulation are shown in Figures 1a and 1b. Thirdly, the proposed mediator (B: Emotion dysregulation) must be related to therapeutic change (C: Emotional distress). This was demonstrated in the current study's research question four. The beta path between emotion dysregulation and emotional distress can be seen in Figures 1b and 1c. Finally, the relationship between the intervention (A: Self-compassion, mindfulness) and therapeutic change (C: Emotional distress) must be reduced after statistically controlling for the proposed mediator (B: Emotion dysregulation). This was demonstrated by all three predictor variables in the current study's research question seven. The reduction in the direct effect between self-compassion, mindfulness and emotional distress, when emotion dysregulation is mediating can be seen in Figures 1b and 1c.

This proposed model therefore indicates that emotion dysregulation may be a mediator between self-compassion / mindfulness and emotional distress. As all four conditions were met by self-compassion and mindfulness it suggests that the impact of treatment (A) on therapeutic change (C) may depend on some intervening processes (B) (Kazdin, 2007).

*Figure 1.* Path-analytic model: Influence of emotion dysregulation in the relationship between mindfulness, self-compassion, other-compassion and emotional distress.



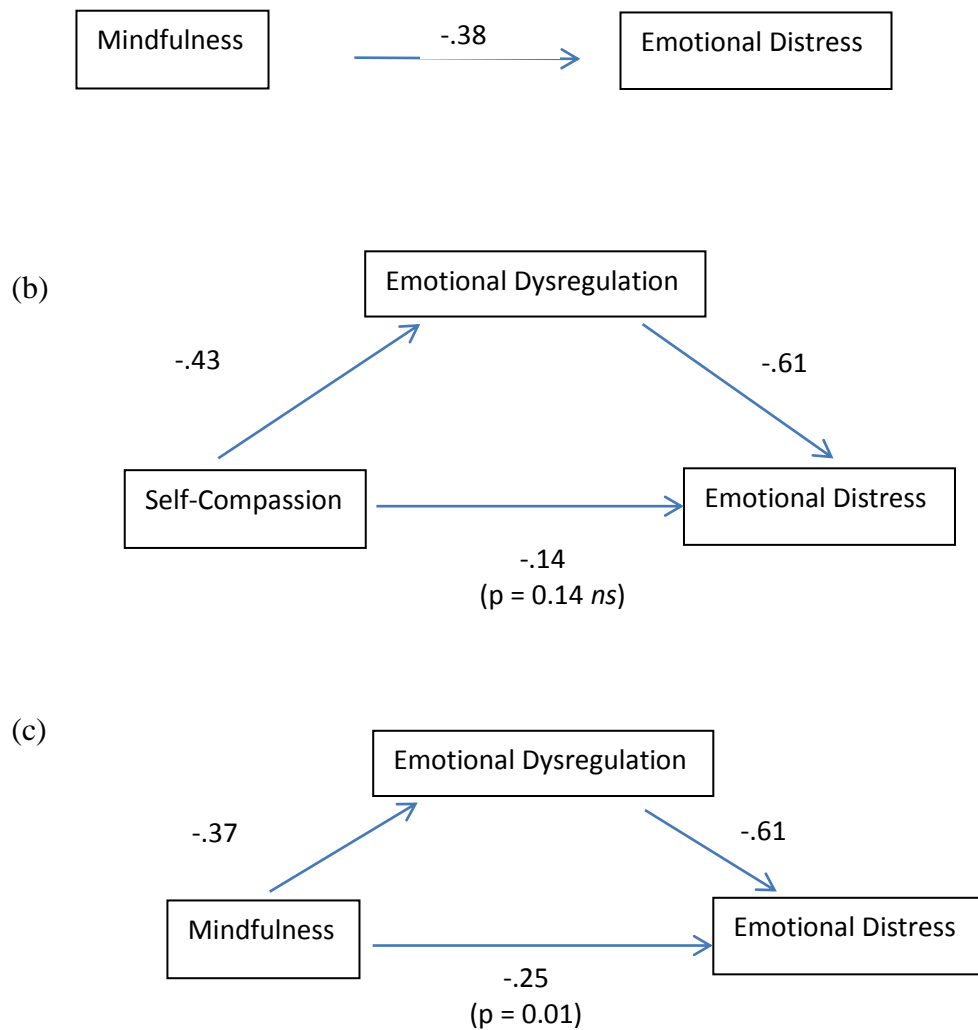


Figure 1c shows that the direct effect of mindfulness on emotional distress has decreased. As this effect has not decreased to zero and remained significant (see Table 3.9) it is only possible to say that partial mediation has occurred (Preacher & Hayes, 2004). Partial mediation indicates the operation of multiple mediating factors, and can only be viewed as suggestive of mediation. Figure 1b shows that the direct effect of self-compassion on emotional distress has also decreased. In the current analysis this effect has now become nonsignificant (see Table 3.9) indicating perfect mediation (Baron & Kenny, 1986). However, a perfect mediation must also be



viewed as suggestive of mediation. These relationships and their interpretation will be discussed in more detail in the next chapter.

Table 3.9

*Summary of the Multiple Linear Regression Analysis for Variables Predicting Emotional Distress with Emotion Dysregulation mediating (N = 94)*

Variable	Unstandardised Coefficients		Standardised coefficients	<i>t</i>	Sig.	Correlation		
	B	Std error	Beta			Zero-order	Partial	Part
Emotion dysreg.	0.45	.13	.35	3.36	.001**	.61	.34	.26
Self-compassion	-36.93	25.31	-.14	-1.50	.148 <i>ns</i>	-.43	-.15	-.11
Mindfulness	-6.91	2.63	-.25	-2.62	.010*	-.56	-.27	-.20
Compassion	-1.36	.61	-.18	-2.23	.028*	-.34	-.23	-.17

\*  $p < 0.05$ , \*\*  $p < 0.005$ , *ns* non-significant

### 3.6 Summary of Research Findings

The first three research questions aimed to explore the relationships between the independent variables. Analyses found that there was no relationship between self- and other-compassion, as predicted. Additionally, mindfulness and self-compassion were found to be positively related as predicted. It was hypothesised that there would be no relationship between mindfulness and other-compassion, however there was a significant positive relationship.

The findings from research question four indicated that difficulties in regulating emotions were associated with anxiety, depression and stress.

Furthermore, difficulties in regulating emotions accounted for a significant proportion of the variance within emotional distress. This suggests that people who have difficulties regulating their emotions also experience emotional distress.

As predicted, self-compassion, other-compassion and mindfulness were found to significantly account for the variance in emotional distress. This may mean that poor mindfulness and compassion may be contributing to emotional distress experienced by the recruited sample. Mindfulness was the strongest predictor variable indicating that the ability to be aware of and pay attention to emotions may be an important factor in reducing emotional distress.

Investigations were conducted into whether the same three predictor variables could account for variation in emotion dysregulation. In these analyses self-compassion and mindfulness accounted for a significant share of the variance within emotion dysregulation. Other-compassion was recorded as a non-significant variable. Self-compassion represented the most unique contribution to emotion dysregulation. This indicates that being aware of emotions in a kindly and compassionate manner may be important in successfully regulating emotions.

Final investigations were conducted to assess the function of emotion dysregulation as a mediator to the extent that it accounts for the relationship between mindfulness, self-compassion, other-compassion and emotional distress. It was found that the relationship between other-compassion and emotional distress was not mediated by emotion dysregulation. Emotion dysregulation was shown to be a partial mediator between mindfulness and emotional distress and a perfect mediator between self-compassion and emotional distress. In mediation analysis the independent variable is assumed to cause the mediator (Baron & Kenny, 1986). Therefore, low levels of self-compassion and mindfulness may lead to poor emotion

regulation leading to symptoms of anxiety, stress and depression (emotional distress). Possible interpretations of these results and links with previous research will now be explored in more detail in the discussion chapter.

## Chapter Four

### Discussion

#### *4.1 Background and Aims of the Research Project*

The current study was designed to explore the relationships between mindfulness, self-compassion and other-compassion with emotion dysregulation and emotional distress. In particular, this study aimed to identify whether unique predictors exist for emotion dysregulation and emotional distress. Additionally, emotion dysregulation was tested as a potential mediator between the predictor variables and emotional distress. Mindfulness and self-compassion are beginning to be explored as variables important to effective emotion regulation and symptom amelioration (eg., Coffey et al., 2010; Erisman et al., 2005; Erisman & Roemer, 2010; Jermann et al., 2009; Neff et al., 2007). The current study aimed to broaden out this area of research by including other-compassion. Other compassion has not been studied as a variable potentially involved in effective emotion regulation and symptom amelioration. It was proposed on theoretical grounds that if low self-compassion could activate the body's threat system then low other-compassion may do the same. Harboursing uncompassionate feelings like blame, resentment and jealousy may lead to emotion dysregulation and emotional distress.

## *4.2 Chapter Overview*

Firstly, there is a discussion regarding the demographic characteristics of the sample and mean questionnaire scores within the studied sample and how these scores compare with published research. The current study's research questions and findings will then be summarised and discussed. This includes an exploration of how the research questions relate to the previous literature and the conclusions that were drawn. This is followed by sections on the clinical implications of the findings, a discussion of the limitations of the research project and thoughts for further research. Lastly, the conclusions of the research project are outlined and discussed.

## *4.3 Description of the Sample Demographic and Questionnaire Findings*

Ninety four individuals took part in the current study. Of this group, 54% were female and 34% were male (with 14% of participants not responding to this question).

Mean scores from the self-report questionnaires for the current study were compared with previous research. Clinical sample mean scores from the self-compassion short form scale could not be established from previous research. Therefore, self-compassion mean scores from the current study ( $M = 13.64$ ,  $SD = 3.02$ ) were compared to an analogue sample ( $M = 36.00$ ,  $SD = 7.33$ ; Neff & Germer, 2012). This indicates that the current study's clinical sample was lower in self-compassion when compared to a student sample. Mindfulness mean scores ( $M = 3.16$ ,  $SD = 0.96$ ) were comparable to the clinical sample used by Van Dam et al. (2011;  $M = 3.09$ ,  $SD = 0.80$ ) study but indicated less mindfulness than the GAD

sample used by Roemer et al. (2009;  $M = 3.44$ ,  $SD = 1.04$ ). Emotion dysregulation mean scores ( $M = 121.61$ ,  $SD = 20.76$ ) were not comparable to the GAD sample used by Roemer et al. (2009;  $M = 96.88$ ,  $SD = 21.49$ ). This indicates that the current study's sample experienced more emotion dysregulation than a pure GAD sample.

The Roemer et al. (2009) study using a GAD sample did not publish their DASS total score mean but did publish means for the individual subscales. The current study's Depression scale mean ( $M = 24.66$ ,  $SD = 11.13$ ) was higher than the published study mean ( $M = 13.50$ ,  $SD = 7.15$ ). The current study's Anxiety scale mean ( $M = 17.77$ ,  $SD = 11.09$ ) was more comparable to the published study mean ( $M = 13.50$ ,  $SD = 9.65$ ). The current study's Stress scale mean ( $M = 27.00$ ,  $SD = 8.98$ ) was higher than the published study mean ( $M = 19.25$ ,  $SD = 9.38$ ). Scores from the Roemer et al. (2009) study indicate their GAD sample had lower depression, anxiety and stress and higher levels of mindfulness than the current study's sample. Lastly, clinical sample mean scores from the other-compassion scale do not exist in previous research. Therefore, the other-compassion mean score ( $M = 23.04$ ,  $SD = 3.55$ ) was compared to Neff & Germer's (2012) sample of individuals who self-referred to a mindful self-compassion programme (MSC) ( $M = 25.02$ ,  $SD = 2.64$ ) and Pommier's (2010) analogue sample results ( $M = 23.06$ ,  $SD = 3.6$ ). This indicates that the current study's sample showed similar levels of compassion towards others when compared with analogue samples.

#### *4.4 Discussion of Results in Relation to the Research Questions and Current Literature*

The aim of the first three research questions was to ascertain relationships between the predictor variables.

*4.4.1 Research question one. Is there a relationship between self-compassion and other-compassion?* As outlined in the Introduction, it was hypothesised that there would be no relationship between self-compassion and other-compassion based on previous research findings (Pommier, 2010). Analysis demonstrated that there was no relationship between self-compassion and other-compassion scores.

Pommier (2010) found that scores on the self-compassion and other-compassion measure were unrelated in an analogue sample of 439 undergraduate students. Although the two constructs have the same theoretical structure and base definition, one questionnaire specifically asks about compassion towards the self and the other asks about compassion towards others. Hypothetically, those who are compassionate towards others may not share the same compassionate stance towards themselves. For example, a lack of kindness for self may manifest itself as a critical and judging internal voice. The same person may act in a very kind and compassionate way towards others, putting the other person's needs first while neglecting their own emotional life and needs in the process.

Supporting this hypothesis, Neff found that highly self-compassionate individuals say they are equally kind to themselves and others (Neff, 2008). Pommier's (2010) study found the same results in that highly self-compassionate people were equally kind to themselves and others while those lacking in self-compassion also reported high levels of compassion toward others. Pommier (2010) makes a noteworthy point that there may be a cultural component to the finding that self-compassion and other-compassion are unrelated. Her study took place in the United States where similarly to the United Kingdom Christianity in its various

forms is the largest religious group (Office for National Statistics, 2011 Census). Additionally, the United Kingdom is historically a Christian country and the religious heritage of a culture shapes the lives of all its members whether or not people identify with being practising Christians (Dawkins, 2007). A key principle in Christianity is that sacrificing the self for others is virtuous. Perhaps, individuals have learned that it is virtuous to be hard on themselves and simultaneously kind to others in order to be a good person (Pommier, 2010). In contrast a Theravada Buddhist culture such as Thailand emphasises self-compassion and the idea that is acceptable to make mistakes, as these may provide an opportunity for improvement rather than using self-criticism (Neff, Pisitsungkagarn & Hsieh, 2008). Additionally, the Dalai Lama and Ladner report that there is no word for guilt in Tibet. They explain that culturally Tibetans express regret but are then compassionate towards themselves pledging to act more skilfully next time without indulging in guilt or self-blame. (Dalai Lama & Cutler, 2009; Ladner, 2004). The hypothesis outlined indicates that Western cultures such as the United Kingdom may be culturally lacking in self-compassion with more expression given to other-compassion than is found in other cultures.

*4.4.2 Research question two. Is there a relationship between self-compassion and mindfulness?* The aim of research question two was to ascertain whether there is a relationship between self-compassion and mindfulness. As outlined in the Introduction it was hypothesised that there would be a positive relationship between self-compassion and mindfulness based on previous research findings (Baer et al., 2006; Van Dam et al., 2011). Analysis demonstrated that there was a significant positive relationship between self-compassion and mindfulness scores.

The constructs of mindfulness and self-compassion are thought to contain some separate and some overlapping factors by researchers (e.g., Baer, Lykins & Peters, 2012; Neff 2003b). The questionnaires used to measure these constructs have not been designed to be exclusive and this is a significant weakness of the current study which will be discussed in more detail later. For example, Mindfulness is one of the three components of Neff's self-compassion scale. There is no single measure which has been devised to look at the unique non-overlapping contributions of self-compassion, other-compassion, and mindfulness and the relationship between these constructs in themselves is still quite poorly understood. In the Buddhist tradition, mindfulness and compassion are considered to be two wings of a bird (Krause & Sears, 2009) with each having overlapping yet unique benefits for wellbeing. Despite overlaps in their definitions there are also distinctions to these constructs. Mindfulness is broadly applied to pleasant, unpleasant, or neutral experiences, whereas self-compassion is generally focused more narrowly on suffering (Germer, 2009). Self-compassion is applied to the global self, whereas mindfulness skills are often applied toward thoughts, feelings, and sensations (Baer, Lykins & Peters, 2012).

It is thought that in order for individuals to fully experience self-compassion, they must adopt a mindful perspective (Neff, 2003b). This requires acknowledging one's feelings in order to feel compassion for them rather than avoiding or repressing or over-identifying with feelings. As mindfulness is a component of Neff's (2003b) self-compassion scale it was possible to hypothesise that mindfulness and self-compassion would be positively correlated in the current study.

Baer et al. (2006) found that Neff's self-compassion scale was positively correlated with the MAAS ( $r = .36, p < 0.01$ ). Additionally, Van Dam et al. (2011)



found that self-compassion was positively correlated with mindfulness again using the same scales as used in the current study ( $r = .43, p < .01$ ). Both of these studies produced significant effect sizes as found in the current study. These correlations are in the moderate range indicating that the mindfulness and self-compassion scales are similar but that there may be areas of non-overlap.

Erisman et al. (2005) use Hayes and Feldman's (2004) definition of mindfulness which incorporates compassion: 'mindfulness, through bringing awareness to emotional experiences in a way that is compassionate and non-judgemental, may facilitate a healthy engagement with emotions'. They define mindfulness and self-compassion as different aspects of a unitary concept and conduct their research within this paradigm. However, when examining the theoretical and empirical literature they are the only authors to treat mindfulness and self-compassion in this way.

*4.4.3 Research question three. Is there a relationship between other-compassion and mindfulness?* The aim of research question three was to ascertain whether there is a relationship between other-compassion and mindfulness. As outlined in the Introduction Chapter it was hypothesised that there would not be a relationship between other-compassion and mindfulness based on previous research findings (Pommier, 2010). However, analysis demonstrated that there was a significant positive relationship between other-compassion and mindfulness.

Pommier's (2010) analogue study found that other-compassion was not significantly correlated with mindfulness ( $r = -.12, ns$ ). Although nonsignificant this correlation was a negative one while in the current study a positive correlation was found. However, Pommier (2010) used the Southampton Mindfulness Scale (SMS)

in her study in contrast with the MAAS which was used for the current study. Pommier noted that the SMS asked about internal processes while the other-compassion scale was written to highlight external behaviours which function jointly with others. She suggested another measure of mindfulness should be used in future research in order to establish the relationship between the CS and mindfulness.

Similar to the SMS, the MAAS used in the current study also asks about internal processes which is still in contrast with the other-compassion scale which functions jointly with others. Despite this, the current study found a significant positive relationship between mindfulness and other-compassion. This indicates two interesting possibilities 1) that those who were more likely to be paying attention in the present moment had a more compassionate stance towards others or 2) those who are more compassionate towards others may be able to be present in the moment with fuller awareness. Future research could explore these ideas further by testing out the relationships between mindfulness, other-compassion and constructs such as rumination and preoccupation. It is possible that those who are more preoccupied and who ruminate may find it difficult to be mindfully present and then have the space to activate a compassionate towards others. Conversely, it is possible that those with high mindfulness and high compassion towards self and others may process emotions with a sense of ease relieving an individual of obsessions, preoccupations and ruminations. This research idea would parallel Neff's (2003b) study showing that self-compassion had a significant negative correlation with rumination and a significant positive correlation with emotional processing.

*4.4.4 Research question four. Do difficulties in emotion regulation predict a significant amount of the variation in emotional distress?* This research question was designed to establish whether there was a relationship between emotion

dysregulation and emotional distress within the study's population sample. It was hypothesised that difficulties in emotion regulation would be positively correlated with emotional distress. This produced a significant positive correlation with a large effect size. Additionally it was hypothesised that emotion dysregulation would significantly account for the variance in the measure of emotional distress. This produced a significant regression model with emotion dysregulation accounting for 37.1% of the share of the variance of emotional distress.

These results suggest that it is possible that the study's population sample are experiencing emotional distress as they are not able to detect and accept emotions when they arise, move towards desired goals in spite of difficult emotions and use different regulation strategies, depending on the situation (Gratz & Roemer, 2004). Instead, individuals in distress may not allow upset feelings to fully arise and dissipate as they may use strategies such as suppression, rumination or avoidance.

As outlined in the Introduction, a large scale meta-analysis examining emotion-regulation strategies across psychopathology was conducted by Aldao et al. (2010). They combined 241 effect sizes for 114 studies that examined the relationships between dispositional emotion regulation and psychopathology. Across four disorders (eating, substance misuse, anxiety and depression) they found a large effect size for rumination and a medium to large effect size for avoidance and suppression. These results are compatible with the results from the current study which found that emotion dysregulation is related to emotional distress.

Furthermore, this meta-analysis found that adaptive strategies such as acceptance, reappraisal and problem solving were associated with less psychopathology. Overall Aldao et al. (2010) found that the maladaptive strategies listed above were more strongly related to psychopathology than the adaptive strategies listed above. It is

possible that mindfulness, self-compassion and other-compassion may be additional adaptive emotion regulation strategies. Mindfulness, self-compassion and other-compassion could be utilised in a similar manner as the strategies of acceptance, reappraisal and problem solving to bring about a more regulated emotional state. After the publication of this meta-analysis, Aldao and Nolen Hoeksema (2010) produced another study examining emotion regulation strategies in relation to anxiety, depression and eating disorders. They sampled undergraduate students (N=252) and again found that maladaptive strategies (rumination, suppression) were more strongly associated with psychopathology in comparison to adaptive strategies (reappraisal, problem solving). The authors suggest that the use of maladaptive strategies may play a more central role in psychopathology than the non-use of adaptive strategies. However an examination of mindfulness and compassion as potential adaptive strategies is again missing.

*4.4.5 Research question five. Do mindfulness, self-compassion and other-compassion significantly predict emotional distress?* The aim of this research question was to ascertain whether mindfulness, self-compassion and other-compassion predicted emotional distress, or specifically, anxiety, depression and stress. Analysis of the variables to ascertain unique predictions was also conducted.

It was hypothesised that all three of the independent variables would significantly account for the variance in the measure of emotional distress. The current study found a significant regression model with the independent variables accounting for 41.1% of the variance within emotional distress. Van Dam et al. (2011) also found that self-compassion and mindfulness significantly shared the variance of symptom severity among individuals with mixed anxiety and depression. Additionally, Pommier's (2010) study found that other-compassion was correlated

with the personal distress scale of Interpersonal Reactivity Index (IRI; Davis, 1990). Thus, the results from the current study are in line with reported literature.

These results can be explained by the suggestion that it is possible that those experiencing emotional distress have difficulties concentrating, paying attention to, and not-judging but accepting whatever they are experiencing in the present moment (Bishop et al., 2004). Distress may be reduced if individuals treat themselves with kindness, recognising their shared humanity while being mindful when considering negative aspects of themselves (Neff, 2011). Additionally, those in distress may not be open or aware to others' pain, instead avoiding or disconnecting from it (Neff, 2003a).

In the current study, the measure of mindfulness recorded the highest significant beta value followed by self-compassion and then other-compassion. This indicates that in the current study mindfulness represents the most unique contribution to emotional distress. However, this result is at odds with research finding that self-compassion explained up to 10 times more variance than mindfulness in symptom severity and quality of life among individuals with mixed anxiety and depression (Van Dam et al., 2011). This is despite the fact that the Van Dam et al. study used comparable questionnaires to the current study's questionnaires, i.e. the MAAS and the long-form of the SCS. It is therefore possible that using the long-form of the SCS rather than the short-form in the current study, may have increased predictive power. Further, the Van Dam et al. (2011) study had a much larger sample size than the current study (N=504 compared with N= 94) which they recruited online from a variety of self-help and mental health websites around the world. They did not have any inclusion or exclusion criteria apart from age and English literacy. As some of the participants were recruited from Asian collectivist

societies and potentially Buddhist countries it is possible that their sample was culturally higher in self-compassion than the current study's sample. For example, Neff et al. (2008) found that Thai people were more self-compassionate than people from the United States because of embedded cultural and religious beliefs.

*4.4.6 Research question six. Do mindfulness, self-compassion and other-compassion significantly predict emotion dysregulation?* The aim of this research question was to ascertain whether mindfulness, self-compassion and other-compassion predicted emotion dysregulation. Analysis of the variables to find unique predictions was also conducted.

It was hypothesised that the independent variables would account for a significant share of the variance within emotion dysregulation and that self-compassion would best predict emotion dysregulation. The current study found a significant regression model with the independent variables accounting for 46.5% of the variance within emotion dysregulation. This result is comparable to the study which found that self-compassion and mindfulness accounted for 52% of the variance within emotion dysregulation (Erisman et al., 2005). The population of the Erisman study was non-clinical (undergraduate students) which may account for the 5.5% difference between the studies.

The current study found that self-compassion recorded a higher beta value (-.43) than mindfulness (-.37). The other-compassion variable recorded a non-significant beta-value (-.09). This indicates that low levels of self-compassion represents the strongest unique contribution to explaining emotion dysregulation. It also had the largest part-correlation which would imply that this unique predictive power holds true even when the influence of the other independent variables is controlled for. This finding is also comparable to the findings by Erisman et al.

(2005) who reported self-compassion (-.22) as slightly more robust predictor of emotion dysregulation than mindfulness (-.17).

Reconsidering the definition of emotion regulation and Neff's components of self-compassion allows for an analysis of the current study's results. Emotion regulation has been defined as: 'awareness and acceptance of emotions, the ability to move toward desired goals in spite of difficult emotions, and the ability to flexibly and adaptively use different regulation strategies, depending on the situation' (Gratz & Roemer, 2004). Neff (2003) operationalises self-compassion as: 'Self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification'. In the current study, the results suggest that those with low self-compassion may have difficulties accepting negative emotions. It is possible that the kindness and common humanity aspects of self-compassion allow people to accept emotions as they arise rather than over-identify with those emotions. Acknowledging that all humans experience negative emotions may produce an acceptance of emotions exactly as they are. Being mindfully aware of this may in turn reduce a narrow perspective of over-identification. Furthermore, those with low self-compassion may not have the skills to utilise self-compassion as a flexible and adaptable regulation strategy. It is possible that in times of emotional distress those with low self-compassion may use self-judgement and feel isolated (Neff, 2003b). This maladaptive habitual response may activate the threat system increasing adrenaline related sensations such as sweating, muscle tightness and increased heart rate (Gilbert, 2009). At times of emotional distress employing self-compassion may act as an adaptive regulation strategy, activating the self-soothing system characterised by feelings of peace and relaxation.

In the current study mindfulness was also a significant predictor of emotion dysregulation. It is possible that mindfulness aids people in paying attention to and recognising emotions as they manifest as physical sensations in the body, mental states or action urges. Therefore, in the current study those with low levels of mindfulness may have difficulties regulating their emotions as they are less aware of their emotional life. It is possible that at times of emotional distress those with low levels of mindfulness may not confront their emotions with open mindful awareness, but rather have a desire to avoid or suppress difficult feelings which are examples of poor emotion regulation.

The current study hypothesised that other-compassion would be a unique predictor of emotion dysregulation, however it was not. Other-compassion is constructed from kindness versus indifference, common humanity versus separation and mindfulness versus disengagement (Pommier, 2010). Those with lower levels of other-compassion may feel indifference, separate and disengaged from others. This may create the space for emotions such as anger, resentment and jealousy to arise and remain sustained (Goleman, 2003). Neff (2003a) has defined other-compassion as ‘being touched by the suffering of others, opening one’s awareness to others’ pain and not avoiding or disconnecting from it, so that feelings of kindness towards others and the desire to alleviate their suffering emerge’. This suggests that it may be difficult for those with lower levels of other-compassion to attune to others feelings and longings and it may be more habitual to disengage or avoid others’ experiences. The person may then be left with difficult feelings which activate their threat system. Employing other-compassion as an adaptive coping strategy may deactivate the threat system and allow people to regulate their emotions successfully. However, this



hypothesis is not supported by the results in the current study which did not show any relationship between other-compassion and emotion dysregulation.

Other-compassion may not have been a significant predictor variable of emotion dysregulation for several reasons. It may have been nonsignificant due to overlap with mindfulness in the model, for example, other-compassion was positively correlated with mindfulness. There was a trend towards a significant negative relationship between other-compassion and emotion dysregulation. Other-compassion and emotion dysregulation were significantly negatively correlated ( $p = .02$ ). However, once other-compassion was included in the model with the two other predictor variables it lost its statistical significance ( $p = .28$ ). This indicates that lower other-compassion scores were related to higher emotion dysregulation. It is possible that other-compassion did not significantly predict emotion dysregulation within the model as indicating through responses on the questionnaire that one has poor other-compassion may not be seen to be socially desirable as kindness towards others is a social norm. Furthermore, it is possible that because the other-compassion scale asks people how they think, feel and act towards others generally that it doesn't tap into how people would think, feel and act towards others if they were emotionally distressed and upset with a particular person. If the scale did ask questions regarding how people respond emotionally to others that they are upset with, participants may have responded with less other-compassion scores and higher emotion dysregulation to a statistically significant level within the model.

*4.4.7 Research question seven. Does emotion dysregulation play a mediating role within the relationships between mindfulness, self-compassion, other-compassion and emotional distress?* The aim of this research question was to

explore the possible mediating role of emotion dysregulation in the relationship between mindfulness, self-compassion, other-compassion and emotional distress.

It was hypothesised that emotion dysregulation would have a significant mediating role in the relationship between mindfulness, self-compassion, other-compassion and emotional distress. The current study found that emotion dysregulation had a mediating role in the relationship between mindfulness, self-compassion and emotional distress. However, emotion dysregulation did not have a mediating role in the relationship between other-compassion and emotional distress.

These findings could suggest that some of the influence that poor mindfulness and poor self-compassion have on emotional distress is mediated by inadequate emotion regulation. This may provide support for mindfulness and self-compassion acting as methods of mind-training that could facilitate improved emotion regulation; this may in turn lead to a decrease in emotional distress. No previous studies have explored this mediation but it has been suggested theoretically by Bishop et al. (2004) who proposed that ‘mindfulness approaches are not considered relaxation, but rather a form of mental training to reduce vulnerability to reactive modes of mind that might otherwise heighten emotional distress or perpetuate psychopathology’.

The proposed model indicates that emotion dysregulation may be a mediator between self-compassion, mindfulness and emotional distress (Figure 1 in the Results chapter). It suggests that the impact of treatment (A: Self-compassion, mindfulness) on therapeutic change (C: Emotional distress) really depends on some intervening processes (B: Emotion dysregulation) (Kazdin, 2007). A mediator can be defined as an intervening variable (in this case, emotion dysregulation) that may account statistically for the relationship between the independent (in this case, self-compassion / mindfulness) and dependent or outcome variable (in this case,

emotional distress). However, something that mediates change may not necessarily explain the processes of how change came about. Also, the mediator could be a proxy for one or more other variables or be a general construct that is not necessarily intended to explain the mechanisms of change (Kazdin, 2007). However, the mediating model proposed in this research question is theory driven and based on initial data from experimental studies exploring emotion regulation skills and their effect on emotional distress (e.g., Aldao, Nolen-Hoeksema & Schweizer, 2010; Arch and Craske, 2006; Erisman and Roemer, 2010; Mennin, Fresco, Holloway, Moore & Heimberg, 2007). A theory driven model based on initial data improves its validity.

The results from this research question indicate that the relationship between self-compassion and emotional distress is ‘perfectly’ mediated by emotion dysregulation. Additionally, the relationship between mindfulness and emotional distress is ‘partially’ mediated by emotion dysregulation. As such, self-compassion and mindfulness may play an important role in strengthening emotion regulation and preventing emotional distress.

Emotion dysregulation did not provide a causal pathway between other-compassion and emotional distress. This is because there was no direct significant relationship found between other-compassion and emotion dysregulation, meaning it did not meet the criteria for mediation analysis outlined by Kazdin (2007). Potential reasons why other-compassion was not a significant predictor of emotion dysregulation are discussed in research question six. The clinical implications of the results from the research questions will now be explored.

#### *4.5 Clinical Implications*

In previous studies, mindfulness and self-compassion have been found to be linked to psychological wellbeing and to be protective factors against mental health disorders (e.g., Gilbert and Procter, 2006; Mayhew & Gilbert, 2008; Neff & Germer, 2012; Teasdale et al., 2000; Teasdale & Ma, 2002). Mindfulness has been found to be positively associated with emotional intelligence, clarity of emotional states, mood repair, attention to emotions and openness to experience and negatively correlated with rumination and absorption (Brown & Ryan, 2003). Self-compassion has been found to be positively associated with life satisfaction, happiness, optimism and positive affect and negatively correlated with neurotic perfectionism, depression, anxiety and self-criticism (Neff, 2003b; Neff et al., 2007). Although limited in research other-compassion has been positively correlated with compassionate love, wisdom, social connectedness and empathy and negatively correlated with personal distress (Pommier, 2010). The current study found that mindfulness, self-compassion and other-compassion were all significant predictors of emotional distress. This suggests that all three variables may have important clinical implications for those in mild-moderate distress, such as the study's population sample.

Evidence suggests that mindfulness and self-compassion may be malleable. For example after mindfulness based programmes participants' mindfulness scores increase (Shapiro, Brown, Thoresen & Plante, 2011) and after self-compassion based programmes self-compassion scores increase (Neff & Germer, 2012), both reporting large effect sizes. Although other-compassion is under researched, clinically observed initial data indicates that it too may be malleable. This was shown in Neff and Germer's (2012) Mindful Self Compassion (MSC) programme where, although other-compassion was not specifically taught, other-compassion scores increased

post-programme with a large effect size. Moreover, adaptive emotion regulation effects have been observed after small-dose laboratory studies utilising mindfulness and self-compassion. For example, Arch and Craske (2006) found that a 15-minute “focused-breathing induction” assisted participants in regulating their emotions. Additionally, Neff and colleagues (2007) found that those who reported an increase in self-compassion after taking part in a Gestalt two-chair exercise also reported experiencing increased social connectedness and decreased self-criticism, depression, rumination, thought suppression, and anxiety. The current study showed that all three predictor variables significantly shared the variance of emotional distress. However, only self-compassion and mindfulness significantly predicted the variance in emotion dysregulation. Additionally, emotion dysregulation mediated the relationship between self-compassion / mindfulness and emotional distress. This suggests that self-compassion and mindfulness could be seen as important components of treatment, increasing a person’s resilience to emotional distress by enhancing their emotion regulation strategies.

*4.5.1 Mindfulness.* MBSR programmes have an impressive and growing body of evidence indicating that mindfulness training might enhance general features of coping with distress and disability in everyday life, as well as under more extraordinary conditions of serious disorder or stress (Grossman, Niemann, Schmidt & Walach, 2004). MBSR combines meditation and Hatha yoga to help patients cope with stress, pain, and illness by using moment-to-moment awareness. MBCT has been shown to increase mindfulness, leading to symptom amelioration (Evans et al., 2008) and relieving insomnia (Yook et al., 2008) in anxiety disorders. Large-scale randomised controlled trials have indicated that MBCT assists in the prevention of relapse in depression (Ma & Teasdale, 2004; Teasdale, Segal & Williams, 2000) and

participants report an improvement in quality of life (Godfrin & Van Heeringen, 2010).

MBCT was developed as an intervention to reduce relapse/recurrence of depressive episodes. Since 2004, it has been recommended by the National Institute for Health and Clinical Excellence (NICE 2004) as the treatment of choice for preventing future depression in those individuals who have experienced three or more episodes. The current study indicates that a population sample with mild-moderate mental health difficulties report low levels of mindfulness. Furthermore, mindfulness was a significant predictor variable within emotional distress and emotion dysregulation. This indicates that the population sample who were experiencing mild to moderate mental health difficulties had low levels of trait mindfulness and also experienced emotion dysregulation and emotional distress. Future studies which focus on the mechanism of change during mindfulness based therapies would indicate what type of mindfulness treatments are most beneficial for who. If further research does identify aspects of mindfulness as important to mental health recovery then more people may benefit from accessing mindfulness based treatment programmes. Research by the Mental Health Foundation in relation to the 'Be Mindful' campaign has suggested that few people who might benefit from mindfulness courses are currently being offered them (Mindfulness Executive Summary, 2010), despite NICE guidelines. The campaign is calling for an expansion of MBCT services which could be led through the existing IAPT programme. The results from the current study indicate that low mindfulness predicts emotion dysregulation and emotional distress. Mindfulness programmes run through IAPT would give people who may benefit from training in mindfulness the opportunity to take part in a programme.

*4.5.2 Self-compassion.* There is currently a growing interest in the development of strategies that aim to increase self-compassion in order to protect against or help to manage psychopathology linked to shame and self-criticism (Gilbert & Irons, 2005; Gilbert & Procter, 2006). These approaches have collectively been termed ‘compassionate mind’ (CM) or ‘compassion focussed therapy’ (CFT). CFT is a multimodal approach that draws from evolutionary, social, and Buddhist psychology and developmental neuroscience. One of its key concerns is to use compassionate mind training to help people develop and work with experiences of inner warmth, safeness and soothing, via other-compassion and self-compassion (Gilbert, 2009). Currently, there is limited empirical support for this approach. Procter and Gilbert (2006) evaluated a compassionate mind group for six participants. Results showed significant reductions in depression, anxiety, self-criticism, shame, inferiority and submissive behaviour. There was also a significant increase in the participants’ ability to be self-soothing and focus on feelings of warmth and reassurance for the self. These results show initial positive results, however the small sample size makes the results tentative at this stage.

Additionally, as previously mentioned, Neff and Germer (2012) have produced a study examining the effectiveness of the Mindful Self-Compassion programme. This programme is an eight-week workshop designed to train people to be more self-compassionate. Treatment participants (N=26) were compared with waiting-list controls (N=27). Results showed significant gains in self-compassion, mindfulness and various wellbeing outcomes. In one study researchers set out to identify the mechanisms of change by monitoring 60 MBCT participants (Kuyken et al., 2010). They found that increases in mindfulness and self-compassion across treatment mediated the effect of MBCT on depressive symptoms at a 15-month

follow-up. Additionally they noted that self-compassion nullified the relationship between cognitive reactivity and depressive symptoms. The data suggests that the reactivity was still high for participants but that a compassionate approach in the face of negative thoughts and feelings is adaptive. The current study offers preliminary empirical support that self-compassion is a predictor variable within emotion dysregulation and that other-compassion is a predictor variable within emotional distress. A clinical extrapolation of this preliminary finding is that training in self-compassion and other-compassion may protect against or reduce emotion dysregulation and emotional distress.

#### *4.6 Strengths and Limitations of the Research Study*

##### *4.7 Strengths of the Research Study*

The current study builds on and extends previous research by investigating the relationship of the clinically malleable skills of mindfulness, self-compassion and other-compassion with emotion dysregulation and emotional distress. The current study's strengths are that it is conducted with a large clinical sample in a clinically naturalistic (IAPT) setting. This large sample size allows for the completion of the multiple linear regression necessary to test the relationships between variables. An additional strength of the current study, is that it includes the variable of other-compassion which has been relatively neglected in the research literature up to this point. These strengths will now be discussed in turn.

*4.7.1 Clinical sample.* The majority of published research examining similar variables to the current study has recruited an analogue sample such as



undergraduate students (e.g., Aldao & Nolen-Hoeksema, 2010; Arch & Craske, 2006; Condon & DeSteno, 2011; Erisman et al., 2005). Critics of analogue research argue that mental health disorders such as depression are qualitatively different in analogue and clinical samples. Research relying on analogue samples often uses a cut-off score on the Beck Depression Inventory of nine and include participants with a score of nine or above as the 'depressed sample'. However, the nature and symptoms of the depressive phenomena in this group of participants is unclear (Enns, Cox & Borge, 2001). The current study utilised a clinical sample of primary care IAPT patients who were experiencing mild-moderate mental health difficulties. This improves external validity and generalisability to other diagnostically-mixed clinical samples. Furthermore, it also means that any clinical implications of the results are more valid. Additionally, the sample size collected for the current study (N=94) met the required minimum for conducting multiple linear regression when using four predictor variables (82 participants were required). Meeting the required minimum sample size for conducting regression protects against statistical errors, allows for a better exploration of the relationships between variables and improves generalisability.

*4.7.2 Other-compassion.* It is rare to see accounts of other-compassion explored in psychology research papers as the focus is generally on self-compassion. This is a growth area for research and preliminary findings suggest that compassion for others may increase our ability to receive social support, leading to more adaptive profiles of stress reactivity (Cosley, McCoy, Saslow & Epel, 2010) and that it is negatively correlated with personal distress (Pommier, 2010). Historically, Lazarus (1991) has theorised that connecting with people compassionately may be more adaptive than disconnecting or feeling overwhelmed by others suffering, but this has

only recently become a focus for clinical research. A perceived strength of the current study was to include other-compassion as a variable alongside mindfulness and self-compassion in order to explore its predictive effects. Furthermore, previous research has examined mindfulness and self-compassion with either emotion dysregulation (Erisman et al., 2005) or with emotional distress (Van Dam et al., 2011). The current study aimed to explore these predictor variables with both emotional distress and emotion dysregulation as outcome questionnaires allowing for a more detailed analysis.

#### *4.8 Limitations of the Research Study*

The limitations of the current study are outlined below. Limitations relate to the questionnaires, systematic literature review, demographic information gathered, cross-sectional design and elements of the procedure. Additionally, a discussion of problems from using variables which have potentially overlapping contributions and a discussion on the current study's mediation analysis is included.

*4.8.1 Questionnaire study.* The questionnaires used in the current study were unlikely to have captured all aspects of the complex variables being explored. In particular, the concepts of mindfulness and emotion dysregulation both have multiple definitions and multiple psychometric questionnaire options available. While some mindfulness questionnaires focus on attention and awareness aspects (such as the MAAS) others focus on lack of emotional or intellectual distortion such as the Freiberg Mindfulness Inventory (FMI; Buchheld, Grossman & Walach, 2001) or may include observing and describing such as the Kentucky Inventory of Mindfulness (KIMS; Baer, Smith & Allen, 2004). As discussed in the Method

chapter the FFMQ (Baer et al., 2006) may have been a more robust and sensitive measure designed to capture multiple facets of mindfulness. However, this was not chosen due to the length of the questionnaire and its feasibility was questioned within an already large questionnaire pack. The DERS was used to measure emotion dysregulation in the current study. This measure has been used in previous related research (e.g. Erismann et al., 2005; Roemer et al., 2009; Erismann & Roemer, 2010). However, it is also possible to measure emotion dysregulation by measuring individual maladaptive strategies, for example, individual questionnaires exist for rumination, emotion or thought suppression and experiential avoidance (RRQ; Trapnell & Campbell, 1999; WBSI; Wegner & Zanakos, 1994; AAQ-II; Bond et al., 2011). Using multiple questionnaires to capture how people are regulating their emotions may have produced more sensitive data. This method would involve delivering multiple questionnaires each representing a different maladaptive strategy, which may capture more detail or aspects of the concept of emotion dysregulation. In sum, it is possible that the MAAS and DERS did not capture all aspects of the concepts of mindfulness and emotion dysregulation explored in the current study.

Additionally self-report questionnaires have a number of limitations associated with them. It is unclear how accurately such questionnaires can capture an individual's 'inner world' as they measure one point in time and may, therefore, be influenced by perceptual or response bias. Further it is possible that participants may not have the self-awareness needed to report on their cognitions, emotions and actions, particularly if they are experiencing emotional distress, such as the current study's sample. Another bias can be in the form of social desirability. This refers to an individual's tendency to either over-report good or socially desirable qualities, or under-report negative ones. For example, in the current study it may have been

perceived to be more socially desirable to enhance responses on the other-compassion questionnaire. In the current study, a step taken to try and reduce this bias was the anonymity of questionnaires. All participants were asked not to include their name or any personally identifiable information on the questionnaire sheets. This may have reduced, but not eliminated, participants' motivation to respond in a socially desirable manner. Despite these limitations the overall advantages of the questionnaires chosen for use in the current study include good internal consistency, thoughtfully chosen questionnaires to match conceptual definitions used in the current study and their use empirically in previous research.

A further limitation of the current study was that participants completed the questionnaire packs in their own time. The advantage of this procedure was that participants could decide in their own time whether they wanted to participate in the study or not. The disadvantage was that the researcher was not available during completion. Therefore participants may not have completed the questionnaire packs in the way intended. If the participant had any queries on how to complete the questionnaires they did not have a researcher to question. This limitation is highlighted in the limited demographic information that was completed by participants. For example, 13.8% of participants did not indicate their gender on the demographic information sheet. However, in order to limit any potential difficulties in collected data each questionnaire had clear and comprehensive instructions included and participants were given the chance to ask questions after the study had been verbally introduced.

*4.8.2 Systematic literature review.* The conducted literature review used very precise search terms leading to a narrow focus. For example, anxiety and depression were searched for simultaneously rather than choosing the 'or' option. This was

designed to maintain the transdiagnostic focus of the thesis. However relevant literature may have been missed and a greater variety of literature may have been discovered if anxiety and depression were searched individually.

*4.8.3 Study design.* The current study made use of a cross-sectional design. This is a type of one-dimensional data set as data is collected by observing participants at the same point in time without regard to differences in time (Hennekens & Buring, 1987). While a cross-sectional design is appropriate for a study of this size it can result in a bias of the questionnaires. One particular problem is when the characteristics of non-responders (or those that decline participation) differ from responders. In the current study it is possible that those that returned questionnaires are more compassionate towards others than those that did not respond. This may provide some explanation to the higher levels of other-compassion found in the current study than was initially hypothesised. Furthermore, this type of design only offers a snapshot in time and may not be fully representative of the individual's functioning as a whole. More importantly, cross-sectional studies make relational cause and effect impossible to infer. Therefore, the current findings should be interpreted with caution. However, given that this research is within a relatively new area, it is important to first establish the existence of relationships between mindfulness, self-compassion and other-compassion with emotion dysregulation and emotional distress. Following this, further research can build on these initial findings to see how these variables change over time and over treatment, and whether change in one variable precedes change in another.

*4.8.4 Study procedure.* There are potential limitations regarding the study procedure. The questionnaires were delivered in week two of each group. This is close to the beginning of treatment, but not at entry to the IAPT service. No data was

collected as to previous treatment and so it is unclear whether participants have received previous therapeutic intervention and how this may have impacted on their current levels of emotional distress. However, a range of emotional distress symptoms were sought after in order to avoid floor or ceiling effects.

*4.8.5 Overlapping concepts.* Mindfulness and emotion dysregulation are two variables which potentially have overlapping contributions. Mindfulness and emotion dysregulation both include awareness and acceptance of emotional responses as part of their definitions (Coffey et al., 2010). The constructs of mindfulness and self-compassion are also thought to have overlapping contributions and mindfulness is one of the three components of Neff's self-compassion scale (Neff 2003b). The measures chosen for the current research study have not been devised to be mutually exclusive discrete factors and the variables used in the current study are not yet fully understood. This makes interpretation of any results of a mediational analysis very speculative until there are measures available which isolate discrete factors.

*4.8.6 Mediation analysis.* Research question seven in the current study is a mediation analysis using the study's variables in a theory driven manner. In the model that has been used to construct the mediation analysis, there is an assumption that emotional distress is the output/outcome and that emotional dysregulation is a mediating variable. However, other models cannot be ruled out, for example, there may be a feedback loop as emotional distress may also be likely to cause a degree of emotional dysregulation. Therefore, research question seven did not control for possible alternative patterns of mediation. Alternative mediation models could have been produced followed by observing which model best fitted the data. However, the hypothetical model and mediation analysis used put all the variables which are

malleable and are targets for therapeutic intervention before the primary measure of change of outcome (symptoms of emotional distress). Therefore this model is in-line with, and informed by, current theory and empirical findings of how mindfulness and self-compassion may relate to emotion dysregulation and psychopathological symptoms (e.g., Aldao, Nolen-Hoeksema & Schweizer, 2010; Arch and Craske, 2006; Erisman and Roemer, 2010; Mennin, Fresco, Holloway, Moore & Heimberg, 2007). Additionally, mediation was assessed using a multiple linear regression model. However there are other, perhaps more sensitive methods of assessing mediation such as the Sobel direct test and bootstrapping. For example, the Sobel Test tests whether the indirect effect of the independent variable on the dependent variable through the mediating variable is significantly greater than zero.

#### *4.9 Suggestions for Further Research*

As discussed above future research should seek to clarify the terms ‘mindfulness’ and ‘emotion regulation’ as well as finding more robust ways of measuring these concepts. This will need to include examining the boundaries between some of the current concepts used in this study, such as different conceptualisations of mindfulness and emotion regulation, and mindfulness and self-compassion which are currently unclear (Coffey et al., 2010). There is currently some overlap in the conceptual definitions of mindfulness and emotional regulation as both include awareness and acceptance of emotional responses. There is also overlap in the conceptual definitions of self-compassion and mindfulness as mindfulness features in the definition and questionnaire for self-compassion. In the

current study there was likely to be some overlap in the measurement of these variables due to the intersection of mindfulness and self-compassion.

Additionally, experimental studies looking at the mechanisms of mindfulness and compassion which enhance emotion regulation will lead to an established consensus theory. Once these variables are better understood they will be able to be more confidently applied and precisely targeted in clinical practice.

An intervention study outlining a timeline between the mediator of emotion dysregulation and therapeutic change in emotional distress scores could also be conducted. This would involve monitoring a treatment intervention of a mindfulness, self-compassion, and other-compassion programme. The same battery of questionnaires used in the current study could be delivered pre-programme, mid-programme and post-programme. Capturing this timeline would allow for a more in-depth exploration of emotion dysregulation as a potential mediator variable. Capturing a timeline would allow the researchers to establish whether the proposed mediator (emotion dysregulation) is changing before the outcome (emotional distress). A timeline such as this would need to assess the proposed mediator before the proposed outcome and the outcome must also be assessed early to ensure the mediator has in fact changed before the outcome (Kazdin, 2007). However, even in a study designed in this manner with an established timeline, mediation does not necessarily suggest the mechanism of action. Additional questions include what precisely is the process of change, and are other variables embedded in the measure (Kraemer et al. 2001).

As discussed in the limitations section of this chapter, the questionnaires employed for the current study may have limited the findings. As quantitative questionnaires cannot capture the complexity of human emotions and relationships,



it is possible that a qualitative approach to research may offer a richer understanding of whether and how people use mindfulness awareness and compassion to regulate their emotions. Qualitative research allows for an in-depth study of the phenomena of interest. Individual participants are focused on intensely to examine processes, meaning, characteristics, and contexts (Kazdin, 2007). Therefore it may be interesting to ask individuals what aspects of emotion dysregulation they find most difficult, for example, becoming aware of emotions, or understanding emotions or strategies. Asking for further information on why aspects are difficult and what methods are used to manage emotional distress would also be useful. It may be insightful to ask how compassionate participants felt towards themselves and others while emotionally distressed. Aspects of compassion such as kindness, common humanity and mindfulness could be further explored.

The current study used the definition and questionnaire of other-compassion which is based on the components of kindness versus indifference, common humanity versus separation, and mindfulness versus disengagement (Pommier, 2010). The questionnaire asks how often people have behaved in the following manner and then offers statements relating to compassionate or un-compassionate behaviours. It is possible that a future study would benefit from asking how people behave while upset. For example, people may respond to others compassionately for the majority of time but while experiencing distressing emotions may find it difficult to cultivate compassionate and kind intentions towards others. It is during these emotionally volatile times that it may be difficult to regulate emotions particularly if the distress is borne from interpersonal problems. Currently there are no questionnaires which look at other-compassion during times of emotional distress so a future study could use a qualitative design.

#### *4.10 Summary and Conclusion*

The results of the current study have provided support that mindfulness, self-compassion and other-compassion predicted a share of the variance of emotional distress. Unlike a previous study by Van Dam et al. (2010) mindfulness was shown to be the most powerful predictor variable of symptoms (emotional distress). This finding can be explained within the theoretical and clinical findings outlined in the introduction chapter which suggest that mindfulness is a non-judgmental, receptive mind state in which individuals observe their thoughts and feelings as they arise without trying to change them or push them away (Hayes, Strosahl, & Wilson, 1999; Martin, 1997; Teasdale et al., 2000). It is this awareness and acceptance of emotions which perhaps regulates emotions so that emotional distress is not prolonged.

Additionally, the results of the study indicate that the influence of self-compassion and mindfulness on emotional distress depends on the mediating factor of emotion dysregulation. Specifically, difficulties regulating emotions accounted for much of the relationship between self-compassion / mindfulness and emotional distress. This provides tentative support for the idea that those with low self-compassion and mindfulness may experience emotional distress because they find it difficult to regulate their emotions. Clinical implications may involve improving people's self-compassion and mindfulness which may ameliorate emotional distress by improving emotion regulation. These findings can be explained within the wider theoretical and clinical observations that mindfulness and self-compassion may both act as mind training to cultivate adaptive modes of mind and additionally as adaptive strategies to be consciously employed at times of emotional distress which may improve emotion regulation. If painful or distressing feelings are not avoided but are instead held in awareness with kindness, understanding, and a sense of shared

humanity, negative emotions may be transformed into a more positive feeling state (Neff, 2003b).

In the current study, other-compassion was positively associated with mindfulness and was also significantly predictive of variance in emotional distress. However, it was not significantly predictive of variance in emotion dysregulation or related to emotional distress with emotion dysregulation mediating. The current study lends some tentative support for other-compassion relating to emotional distress, but was not conclusive.

Overall, this study is one of the first to explore the role of mindfulness, self-compassion and other-compassion in emotion dysregulation and emotional distress in a clinical sample. This study provides some support to the hypothesis that the mental health difficulties of the current study's sample may be due to low levels of mindfulness and self-compassion mediated by poor emotion regulation. This provides further supporting evidence for the validity of mindfulness-based and compassion-based interventions in mental health settings. It also provides pointers to further research generalising these findings, but also to basic research on the constructs themselves, and to longitudinal treatment studies investigating these constructs' temporal and potentially causal relationships with each other.

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#### Legislation

Data Protection Act 1998

## Appendix 1

### *Questionnaire Pack*

## **Impact of Awareness and Compassion on Emotions**

### *Invitation*

We would like to invite you to take part in our research project. This research aims to find out whether the qualities of awareness and compassion help people to manage their emotions. The purpose of the study is to find out if Wellbeing clients find it difficult to regulate their emotions. If they do we can create emotion regulation groups for clients to attend. Before deciding if you want to take part, it is important that you understand what this research involves. Please take time to read all the information below carefully. If you have any questions, please feel free to ask your Wellbeing therapist or to contact me on the details below.

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## *Information*

### ***Why have I been invited to take part?***

We are asking all new clients at the Wellbeing service to take part in the study.

### ***Do I have to take part?***

No, participation is voluntary. You are also free to withdraw at any point without having to give a reason. This would not affect your treatment.

### ***What will happen to me if I take part?***

If you decide to take part you will be asked to fill in 5 additional questionnaires to the 3 questionnaires already administered routinely as part of the Wellbeing service. You are consenting to take part in this study if you return these questionnaires to your therapist. If you would like to know the results of the study let your therapist know and they will post them out to you. If you would like to take part you must return the questionnaires to your therapist within the first 3 weeks of your treatment.

### ***Will my responses be kept confidential?***

All information which is collected about you during the course of the research will be kept strictly confidential. You will be identified by a participant number. Please keep hold of this number. If you decide to withdraw from the study, we will destroy all your questionnaires. You are able to withdraw your data from the study up until the point which the information will be analysed.

### ***What is the purpose of this study?***

This study is being undertaken for educational purposes, as part of my Doctorate in Clinical Psychology. This study will provide the Wellbeing service with the results

of how clients regulate their emotions. These results will help with the planning of future group programmes.

***Are there any disadvantages to taking part?***

Apart from kindly giving up some of your time, there are no other foreseeable disadvantages to taking part in the study. However, please feel free to discuss any concerns you may have with the primary researcher, Simone Moore (contact details above). If you feel in any way distressed while filling in the questionnaires please stop. If you feel distressed please discuss this with your therapist at your next appointment or phone the Samaritans helpline 08457 90 90 90.

***Are there any benefits to taking part?***

The results may help us improve the type of therapy the Wellbeing service delivers to clients in Norfolk and Suffolk.

***What will happen to the results of this project?***

Results of this project will be sent throughout the Wellbeing service by use of Trust email. This project, if accepted, will also be printed in a scientific journal for other health professionals to read. You would not be identified in any report or publication.

***Who has reviewed this study giving ethical approval?***

All research in the NHS is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed by the Southampton Research Ethics Committee and been given a favourable opinion.

***What if something goes wrong?***

If you have a concern about any aspect of this study, you should contact the researcher, who will do their best to answer your questions (contact details on page 1). If you remain unhappy and wish to complain formally, you can contact the research supervisor (contact details on page 1) or Norfolk Patient Advice and Liaison Service (PALS) [0800 587 4132, [pals@norfolk.nhs.uk](mailto:pals@norfolk.nhs.uk)]. If you wish to have further independent advice you can contact the Norfolk Independent Complaints and Advocacy Service [0300 456 2370].

**Thank-you.**

Participant Number:



## The Impact of Awareness and Compassion on Emotions

### Some basic information about you:

Gender: \_\_\_\_\_ Employed/Unemployed/Homemaker/Retired: \_\_\_\_\_  
Age: \_\_\_\_\_ Mental health diagnosis (if known): \_\_\_\_\_

First of all we want to ask you about compassion towards yourself. Sometimes we are very critical of ourselves!

### How I Typically Act Towards Myself in Difficult Times

Indicate how often you behave in the stated manner, using the following scale:

	almost never 1	2	3	4	almost always 5
1 When I fail at something important to me I become consumed by feelings of inadequacy	1	2	3	4	5
2 I try to be understanding and patient towards those aspects of my personality I don't like	1	2	3	4	5
3 When something painful happens I try to take a balanced view of the situation	1	2	3	4	5
4 When I'm feeling down, I tend to feel like most other people are probably happier than I am	1	2	3	4	5
5 I try to see my failings as part of the human condition	1	2	3	4	5
6 When I'm going through a very hard time, I give myself the caring and tenderness I need	1	2	3	4	5
7 When something upsets me I try to keep my emotions in	1	2	3	4	5

balance

- |    |  |   |   |   |   |   |
|----|--|---|---|---|---|---|
| 8  | When I fail at something that's important to me, I tend to feel alone in my failure                              | 1 | 2 | 3 | 4 | 5 |
| 9  | When I'm feeling down I tend to obsess and fixate on everything that's wrong                                     | 1 | 2 | 3 | 4 | 5 |
| 10 | When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people | 1 | 2 | 3 | 4 | 5 |
| 11 | I'm disapproving and judgmental about my own flaws and inadequacies  | 1 | 2 | 3 | 4 | 5 |
| 12 | I'm intolerant and impatient towards those aspects of my personality I don't like                                | 1 | 2 | 3 | 4 | 5 |

Now we would like to know... **How I Typically Act Towards Others**

Indicate how often you behave in the stated manner, using the following scale:

- |   | <b>almost<br/>never</b>  |          |          |          |   | <b>almost<br/>always</b> |
|---|--|----------|----------|----------|---|--------------------------|
|   | <b>1</b>   | <b>2</b> | <b>3</b> | <b>4</b> |   | <b>5</b>                 |
| 1 | When people cry in front of me, I often don't feel anything at all                     | 1        | 2        | 3        | 4 | 5                        |
| 2 | Sometimes when people talk about their problems, I feel like I don't care              | 1        | 2        | 3        | 4 | 5                        |
| 3 | I don't feel emotionally connected to people in pain                                   | 1        | 2        | 3        | 4 | 5                        |
| 4 | I pay careful attention when other people talk to me                                   | 1        | 2        | 3        | 4 | 5                        |
| 5 | I feel detached from others when they tell me their tales of woe                       | 1        | 2        | 3        | 4 | 5                        |
| 6 | If I see someone going through a difficult time, I try to be caring toward that person | 1        | 2        | 3        | 4 | 5                        |
| 7 | I often tune out when people tell me about their troubles                              | 1        | 2        | 3        | 4 | 5                        |
| 8 | I like to be there for others in times of difficulty                                   | 1        | 2        | 3        | 4 | 5                        |



9	I notice when people are upset, even if they don't say anything	1	2	3	4	5
10	When I see someone feeling down, I feel like I can't relate to them	1	2	3	4	5
11	Everyone feels down sometimes, it is part of being human	1	2	3	4	5
12	Sometimes I am cold to others when they are down and out	1	2	3	4	5
13	I tend to listen patiently when people tell me their problems	1	2	3	4	5
14	I don't concern myself with other people's problems	1	2	3	4	5
15	It's important to recognise that all people have weaknesses and no one's perfect	1	2	3	4	5
16	My heart goes out to people who are unhappy	1	2	3	4	5
17	Despite my differences with others, I know that everyone feels pain just like me	1	2	3	4	5
18	When others are feeling troubled, I usually let someone else attend to them	1	2	3	4	5
19	I don't think much about the concerns of others	1	2	3	4	5
20	Suffering is just a part of the common human experience	1	2	3	4	5
21	When people tell me about their problems, I try to keep a balanced perspective on the situation	1	2	3	4	5
22	I can't really connect with other people when they're suffering	1	2	3	4	5
23	I try to avoid people who are experiencing a lot of pain	1	2	3	4	5
24	When others feel sadness, I try to comfort them	1	2	3	4	5

This questionnaire is for us to get an idea about how you are generally feeling.

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you ***over the past week***.

**Did not apply to  
much,  
me at all  
time**

**0**

**1**

**2**

**Applied to me very  
or most of the**

**3**

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3

19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

This questionnaire is about awareness or mindfulness.

Please circle the degree to which you agree with each of the following items using the scale below.

	almost almost always never	very frequently	somewhat frequently	somewhat infrequently	very infrequently						
	1	2	3	4	5						6
1	I could be experiencing some emotion and not be conscious of it until some time later				1	2	3	4	5	6	
2	I break or spill things because of carelessness, not paying attention, or thinking of something else				1	2	3	4	5	6	
3	I find it difficult to stay focussed on what’s happening in the present				1	2	3	4	5	6	
4	I tend to walk quickly to get where I’m going without paying attention to what I experience along the way				1	2	3	4	5	6	
5	I tend not to notice feelings of physical tension or discomfort until they really grab my attention				1	2	3	4	5	6	
6	I forget a person’s name almost as soon as I’ve been told it for the first time				1	2	3	4	5	6	
7	It seems I am “running on automatic” without much awareness of what I’m doing				1	2	3	4	5	6	

8	I rush through activities without being really attentive to them	1	2	3	4	5	6
9	I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there	1	2	3	4	5	6
10	I do jobs or tasks automatically, without being aware of what I'm doing	1	2	3	4	5	6
11	I find myself listening to someone with one ear, doing something else at the same time	1	2	3	4	5	6
12	I drive or walk to places on "automatic pilot" and then wonder why I went there	1	2	3	4	5	6
13	I find myself preoccupied with the future or the past	1	2	3	4	5	6
14	I find myself doing things without paying attention	1	2	3	4	5	6
15	I snack without being aware that I'm eating	1	2	3	4	5	6

And last one!

We want to find out how you manage your emotions particularly if you are upset at the time.

		<b>almost never</b>					<b>almost always</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		<b>5</b>
1	I am clear about my feelings					1	2 3 4 5
2	I pay attention to how I feel					1	2 3 4 5
3	I experience my emotions as overwhelming and out of control					1	2 3 4 5
4	I have no idea how I am feeling					1	2 3 4 5
5	I have difficulty making sense out of my feelings					1	2 3 4 5
6	I am attentive to my feelings					1	2 3 4 5

7	I know exactly how I am feeling	1	2	3	4	5
8	I care about what I am feeling	1	2	3	4	5
9	I am confused about how I feel	1	2	3	4	5
10	When I'm upset, I acknowledge my emotions	1	2	3	4	5
11	When I'm upset, I become angry with myself for feeling that way	1	2	3	4	5
12	When I'm upset, I become embarrassed for feeling that way	1	2	3	4	5
13	When I'm upset, I have difficulty getting work done	1	2	3	4	5
14	When I'm upset, I become out of control	1	2	3	4	5
15	When I'm upset, I believe that I will remain that way for a long time	1	2	3	4	5
16	When I'm upset, I believe that I'll end up feeling very depressed	1	2	3	4	5
17	When I'm upset, I believe that my feelings are valid and important	1	2	3	4	5
18	When I'm upset, I have difficulty focusing on other things	1	2	3	4	5
19	When I'm upset, I feel out of control	1	2	3	4	5
20	When I'm upset, I can still get things done	1	2	3	4	5
21	When I'm upset, I feel ashamed with myself for feeling that way	1	2	3	4	5
22	When I'm upset, I know that I can find a way to eventually feel better	1	2	3	4	5

23	When I'm upset, I feel like I am weak	1	2	3	4	5
24	When I'm upset, I feel like I can remain in control of my behaviours	1	2	3	4	5
25	When I'm upset, I feel guilty for feeling that way	1	2	3	4	5
26	When I'm upset, I have difficulty concentrating	1	2	3	4	5
27	When I'm upset, I have difficulty controlling my behaviours	1	2	3	4	5
28	When I'm upset, I believe there is nothing I can do to make myself feel better	1	2	3	4	5
29	When I'm upset, I become irritated with myself for feeling that way	1	2	3	4	5
30	When I'm upset, I start to feel very bad about myself	1	2	3	4	5
31	When I'm upset, I believe that wallowing in it is all I can do	1	2	3	4	5
32	When I'm upset, I lose control over my behaviours	1	2	3	4	5
33	When I'm upset, I have difficulty thinking about anything else	1	2	3	4	5
34	When I'm upset, I take time to figure out what I'm really feeling	1	2	3	4	5
35	When I'm upset, it takes me a long time to feel better	1	2	3	4	5
36	When I'm upset, my emotions feel overwhelming	1	2	3	4	5

**THANK-YOU!** Please check that you have answered every question in the pack and then return this questionnaire to a Wellbeing/IAPT therapist or to the researcher Simone Moore, ([simone.moore@uea.ac.uk](mailto:simone.moore@uea.ac.uk))

Make sure you leave your email address or phone number once you hand in your questionnaires to go into the draw to win one of two £40 Marks and Spencers vouchers.

## Appendix 2

### *Ethics Committee Approval Letter*



# Health Research Authority

## NRES Committee South Central - Southampton A

Level 3, Block B  
Whitefriars  
Lewins Mead  
Bristol  
BS1 2NT

Telephone: 0117 342 1381  
Facsimile: 0117 342 0445

11 June 2012  
Miss Simone Moore  
Trainee Clinical Psychologist  
University of East Anglia  
Department of Medicine  
Doctoral Programme in Clinical Psychology  
Norwich  
NR4 7TJ

Dear Miss Moore

**Study title:** **What is the Strongest Predictor of Emotion Regulation, Self-Compassion, Other-Compassion or Mindfulness?**

**REC reference:** **12/SC/0333**

Thank you for your email of 8 June 2012, responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study. The revised documentation has been reviewed and approved by the sub-committee.

### **Confirmation of ethical opinion**

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

### **Ethical review of research sites**

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

### **Conditions of the favourable opinion**

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

*Management permission ("R&D approval") should be sought from all NHS*

*organisations involved in the study in accordance with NHS research governance arrangements.*



Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

**It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).**

**You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. Confirmation should also be provided to host organisations together with relevant documentation.**

### Approved documents

The documents reviewed and approved by the Committee are: <i>Document</i>	<i>Version</i>	<i>Date</i>
Evidence of insurance or indemnity		15 May 2012
Investigator CV		17 May 2012
Letter from Sponsor		11 May 2012
Letter of invitation to participant	1	23 January 2012
Other: CV for Supervisor		17 May 2012
Participant Information Sheet	2	08 June 2012
Protocol	1	12 March 2012
Questionnaire: Compassion Scale (CS)		
Questionnaire: Self-Compassion Scale-Short Form (SCS-SF)		
Questionnaire: Mindful Attention Awareness Scale (MAAS)		
Questionnaire: Depression Anxiety Stress Scale (DASS-21)		
Questionnaire: Difficulties in Emotion Regulation Scale (DERS)		
REC application		17 May 2012
Response to Request for Further Information		08 June 2012

### Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

### After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives

detailed guidance on reporting requirements for studies with a favourable opinion,

including:

- Notifying substantial amendments
  - ☐ Adding new sites and investigators
  - ☐ Notification of serious breaches of the protocol
  - ☐ Progress and safety reports
  - ☐ Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

#### Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

**12/SC/0333 Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project

Yours sincerely

**pp**

**Dr Paul Diprose**  
**Alternate Vice Chair**

Email: [scsha.SWHRECA@nhs.net](mailto:scsha.SWHRECA@nhs.net)

Enclosures: *"After ethical review – guidance for researchers"*

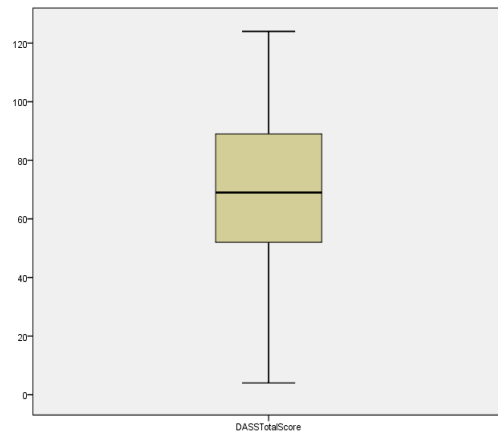
*Copy to:*

*Sue Steel, University of East Anglia  
Miss Beth Muldrew, Cambridgeshire and  
Peterborough Mental Health Trust  
Research and Development Department*

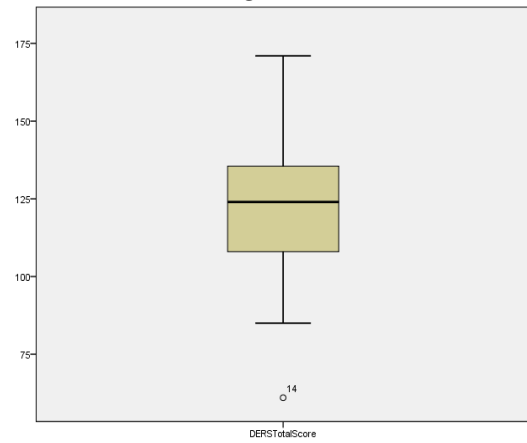
### Appendix 3

*Box Plots for the Measures of Depression Anxiety and Stress, Difficulties with Emotion Regulation Scale, Self-Compassion, Compassion and Mindfulness before outliers and extreme values were removed*

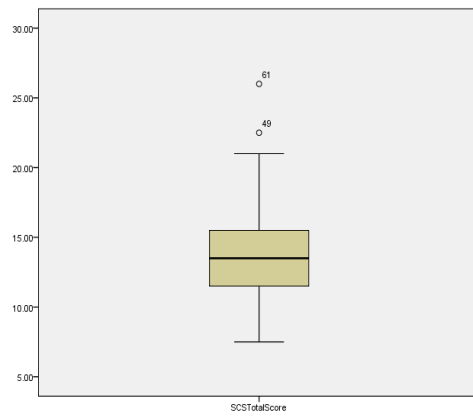
*Box Plot for Depression, Anxiety and Stress Scores*



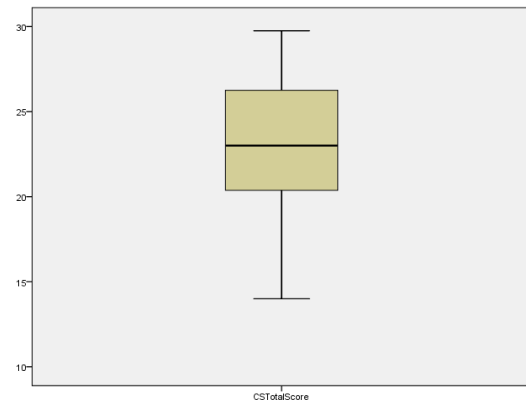
*Box Plot for Difficulties with Emotion Regulation Scores*



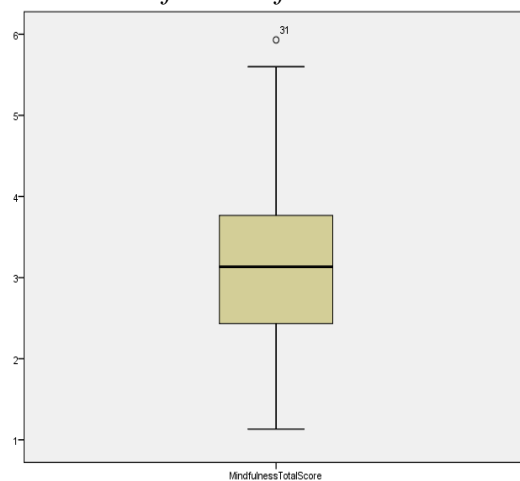
*Box Plot for Self-Compassion Scores*



*Box Plot for Compassion Scores*



*Box Plot for Mindfulness Scores*



## Appendix 4

### *Kolmogorov-Smirnov Results*

*Kolmogorov-Smirnov Results*

DASS total score:  $D(94) = .44, p = > .05$

DERS total score:  $D(94) = .85, p = > .05$

CS total score:  $D(94) = .83, p = > .05$

MASS total score:  $D(94) = .05, p = > .05$

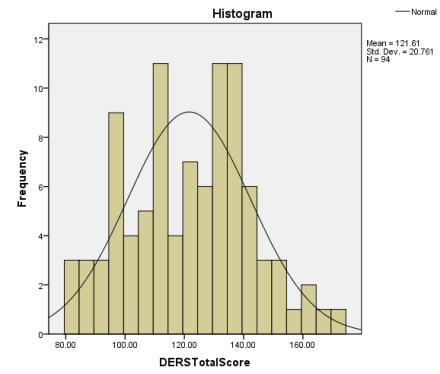
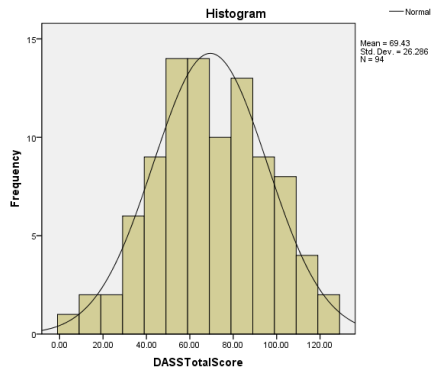
*Kolmogorov-Smirnov results for transformed variables*

SCS total score:  $D(94) = .88, p = > .05$

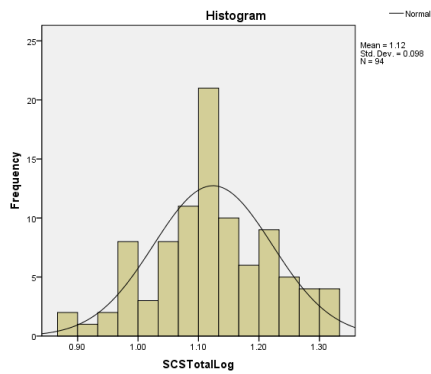
## Appendix 5

*Histograms Showing the Distributions of the Measures of Depression Anxiety and Stress, Difficulties with Emotion Regulation Scale, Self-Compassion, Compassion and Mindfulness*

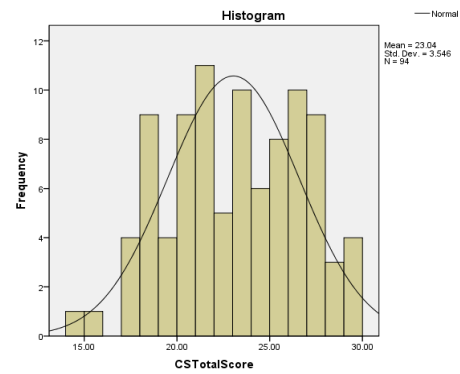
## Depression, Anxiety and Stress Scores      Difficulties with Emotion Regulation Scores



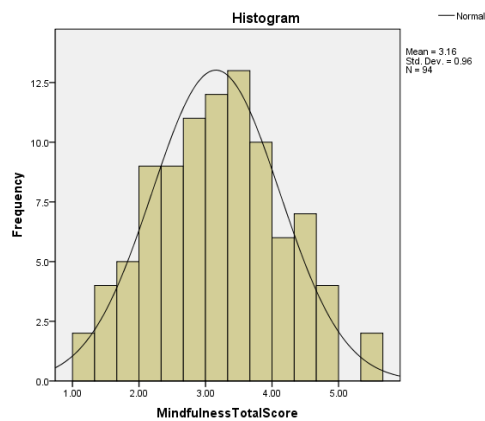
## Self Compassion Scores (post transformation)



## Compassion Scores



## Mindfulness Scores

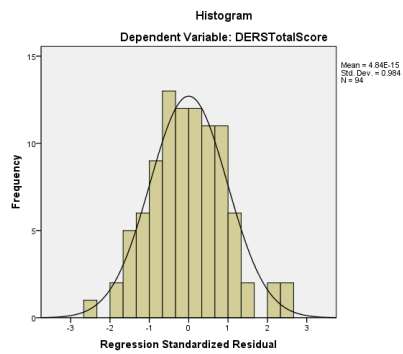




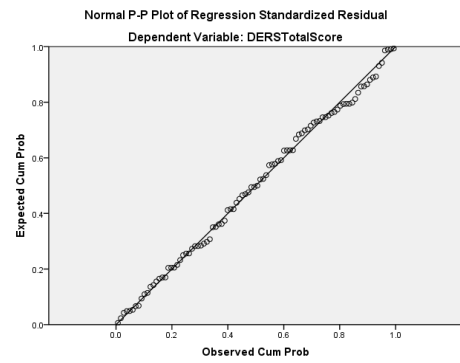
## Appendix 6

*Plots checking the assumptions for linear regression for the dependent variable of Difficulties with Emotion Regulation, and the predictor variables of Self-Compassion, Compassion and Mindfulness*

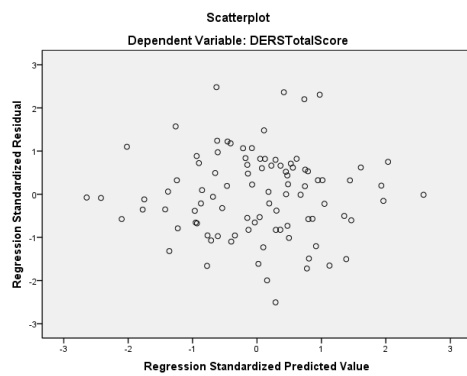
### *Normality of the Residuals Histogram*



### *Normality Probability Plot*



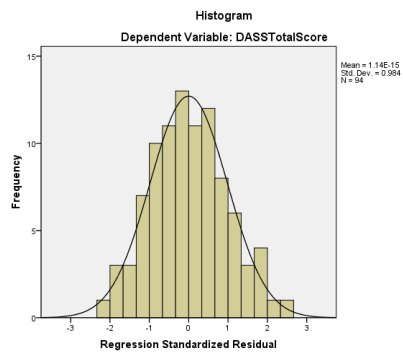
### *Plot of Standardised Residuals Against Standardised Predicted Values*



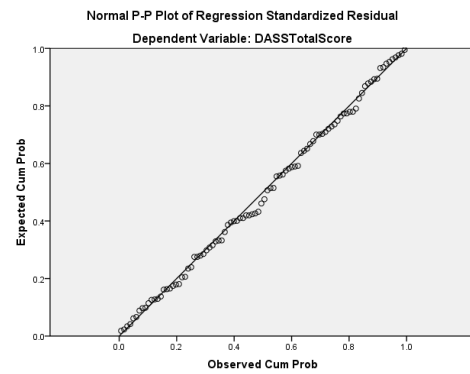
## Appendix 7

*Plots checking the assumptions for linear regression for the dependent variable of Depression, Anxiety and Stress, and the predictor variables of Self-Compassion, Compassion and Mindfulness*

## Normality of the Residuals Histogram Plot



## Normality Probability



## Plot of Standardised Residuals Against Standardised Predicted Values

